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WITH THE WORLD'S PEOPLE

AN ACCOUNT OF THE ETHNIC ORIGIN, PRIMITIVE ESTATE, EARLY MIGRATIONS, SOCIAL EVOLUTION, AND PRESENT CONDITIONS AND PROMISE OF THE PRINCIPAL FAMILIES OF MEN

TOGETHER WITH A PRELIMINARY INQUIRY ON THE TIME, PLACE AND MANNER OF THE BEGINNING

By JOHN CLARK RIDPATH, LL. D.

AUTHOR OF "HISTORY OF THE WORLD" ETC.

PROFUSELY ILLUSTRATED WITH COLORED PLATES, RACE MAPS AND CHARTS, TYPE PICTURES, SKETCHES, AND DIAGRAMS

WASHINGTON, D. C.

CLARK E. RIDPATH

1915

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Part Second.

PRIMITIVE ESTATE OF THE HUMAN RACE.

BOOK III.—PRIMEVAL MAN.

CHAPTER XV.—DIVERS ASPECTS OF BARBARIC LIFE.

IT is the purpose in this book to present as much as is known relative to the primitive condition of mankind in several quarters of the earth. The progress of historical science and archæological research has now made us familiar with many aspects of the early life of man hitherto unknown. It is possible, with our present light, to make a tolerably accurate picture of the social phenomena of several peoples in those stages of their development which lie completely beyond the horizon of formal history. Nor can it be doubted that such reconstruction and revival of the primeval conditions of our race, passing from the state of absolute unconsciousness into the semiwaking of the early dawn, will prove of the keenest interest if only the work be patiently and sympathetically performed.

Essential interest of inquiry into barbaric conditions.

It must be understood at the outset that the beginnings of civilization in different parts of the world are exceedingly diverse in their aspects and tendencies. Nothing can be more striking than the contrasts which the early races of men present to the student in their methods and peculiarities of development. Indeed, hardly any two of the primitive tribes of men wrought in the same manner or with the same results. Their work in attempting to construct their

Diverse aspects of the beginning of the conscious life of man.

social forms was as various as the conditions of the primeval world in which they struggled for existence.

From these considerations it will be necessary to an adequate understanding of the primitive condition of mankind to sketch, in the following chapters, several distinct phases of the social and economic life of man as we see the same

Varying activities of man in the struggle for existence.

forest, with his rude implements and utensils, and becomes a man of the woods, a roving hunter, traversing hill and thicket, eating the mast of the oak and the beech tree, living by the hazards of migration and tribal warfare. Still again, he gathers his little group around him on the shingly shore of the northern seas. He rakes from the sand,

Savages of the woods and seashores.

MAN IN THE AGE OF THE CAVE BEAR.—Drawn by Emile Bayard.

obscurely outlined along the far horizon of traditional history. In one quarter of the world we shall see the newborn man take to the caverns for a habitation and defense. We shall see him, with huge clubs in his hands, fighting like a giant with wild beasts, sometimes crushing their skulls and sometimes himself torn to death by their tremendous fangs.

In another quarter man takes to the where the receding wave has been, the shellfish left there by the tide. These he breaks and devours for his subsistence. He builds him a tent, and constructs simple implements for the gathering and preparation of his food. He heaps up around him the waste of his rude methods of life, the débris of his half-savage industry, until his tent is on a shell mound, mixed with broken frag-

ments of his utensils, and bearing thus to future ages the sole evidence of his existence and manner of life.

Still again we see the primitive man driving piles in the margin of the mountain lake and building a platform upon them, and on this platform, above the water, rearing rude huts, from which he reaches the shore by a flattened log or other simple means of transit. Here he

Primeval man builds for himself a home over the water.

herds driven from place to place on the plains of the East, as the spring line of verdure fluctuated over the landscape like the shadow of a cloud.

Again, we note those who built for themselves abodes of mud and bitumen. We see the low-lying plain with its cubical houses of clay or sun-dried bricks, and are surprised to observe that what some primitive tribes of the Orient did in

Barbarian abodes of clay or sun-baked bricks.

ASPECTS OF BARBARIC LIFE.—Hut of Ostiaks.—Drawn by Durand Brager.

is comparatively safe from the attacks of the wild beasts with which he finds himself otherwise unable to contend. Through the rude slabs in the floor in his dwelling he also drops into the water his broken implements of peace and war; and these vestiges of a primitive and peculiar form of life are taken from the mud in our own century to bear witness of one of the strangest aspects of primitive history. As to the so-called patriarchs of antiquity, their well-known method was that of keepers of flocks and the dawn of their nationality thousands of years ago, the Arizonian races of Southwestern North America have reduplicated, in every particular, in their attempted emergence from barbarism. In all the central regions of the New World the Red Man will invite us with his wigwam to scrutinize his manners and customs and to note, not without sympathy, his hopes and aspirations.

Far to the north the frozen ice huts appear, with their stunted but resolute inhabitants braving the rigors of the

frigid zone, kindling the fires within them and without from the same heavy carbonaceous elements furnished by the monsters of the deep. All these and many more are the peculiarities of primeval life which will demand our attention in the the present book.

It can but be of interest in this connection to discuss briefly the question *why it is* that such radical differences existed among the primitive tribes of men in their methods of organizing themselves into societies. What were the causes of so great divergences in the early life of man? It would be inferred, *à priori*, that all semibarbarous peoples in their emergence from savagery would, under the influence of instinct correlated with their environment, adopt almost identical methods in their struggle for existence and progress, and present a common type of development; but the facts are utterly at variance with this hypothesis. To the casual observer, indeed, it would seem that the diverse methods, the opposing manners and customs, and the contradictory institutions of primitive mankind, were the work of caprice rather than of reason and order. A closer study of the problem, however, will doubtless show that in this also, as well as in all other elements of human history, law has been the dominant principle and reason the guiding light.

Why do savages thus differentiate in manner of life?

ASPECTS OF BARBARIC LIFE.—Search for the Skulls.—Drawn by Riou.

ASPECTS OF BARBARIC LIFE.—Patagonians Fishing.—Drawn by Rieu.

Doubtless the first great cause of the divergences noticeable in the beginnings of civilization between the methods of one tribe or family of men and those of another, is the varying influences of nature reäcting upon the human frame and faculties. The aspects and conditions of the external world are far removed from regularity. Every region has its own climate, its own aspect of earth and sky. As to the earth itself, its surface is variable in the last degree. The soil has different potencies. The water distribution passes through all grades from scarcity to abundance, from the blistering desert to the dripping humidity of rainy islands. The surface in some parts spreads out on a dead level of valley or plain, and anon rises into hill and cliff and mountain. The running streams are equally irregular in their disposal. Some regions have the rivers as the basal fact in their constitution, while in others the range of highlands, the rocky ridge or snow peaks scattered at intervals, are the fundamental condition of geography. Greater still is the variation of heat and cold, from the rigor of the hyperborean regions to the furnace of the tropics; and, if possible, the differences in the electrical and magnetic forces that girdle the earth and impart a certain nervous tension to all animal existence are even more pronounced and remarkable.

First cause the reäctions of nature on human faculties.

Under these varying circumstances of the external world the plants on its surface and the living creatures that subsist thereby fluctuate and change in their instincts and manner of life. Particularly does that supreme animal called man fit by multifarious adjustments into his changeful environment. From his superior and more refined organization he is especially susceptible to the influences of the external world. More than any beast of the field does he sway and bend and conform to the climatic exigencies under which he is placed. In him the sap of the world circulates almost as palpably and potently as in the plant that fixes its roots in the soil. In him every varying condition of the outer world is reflected; and in him the very tone and rhythm and pulsebeat of universal nature find a perpetual echo and response.

Man especially susceptible to influences of the natural world.

These considerations are fully borne out by an actual examination of the primitive life of man in process of development under the varying conditions of nature. Indeed, no stage of human growth is exempt from the domination of the natural world. Every part and filament of the garb which civilization wears has taken its form and color and substance in large measure from the material elements and conditions under which it is woven. It can not be doubted that all the aspects of the life and endeavor of man have in them, when closely scrutinized, the outline and semblance of physical conditions caught by reflection from the external forms and circumstances of his environment and home.

All parts of civilization tinged with environing conditions.

So palpable and powerful have been these influences of the external world on the development and character of the human race that many authors have been disposed to make them the be-all and the end-all of the civilization of man. By such writers the theory of a physical basis for all things has been confidently adopted; and it is urged, without doubt or hesitation, that even the highest and most spiritual faculties and moods of the human mind are resolvable by easy

Theory of environment has been stretched too far.

process into elemental parts derivable from nature.

Under this hypothesis man is regarded simply as a plant with powers of locomotion and consciousness. True, his feet do not strike into the soil. He has no local attachment to the ground out of which he has sprung; but like those vegetable anomalies which grow freely in the open air or water without the formality of roots and tendrils, so man, in this view of his genesis and nature, grows and develops into conscious life and powerful activity by the mere absorption, from his free surroundings, of all his elemental juices, his fibers, and his faculties.

VARIABILITY ILLUSTRATED IN MULTIPLE YOUNG OF SAME MOTHER.—GUINEA PIGS

But this view of the case is inadequate to the solution of the problem. The theory of a physical basis of civilization is by no means to be rejected as a chimera. It is simply insufficient *of itself* to explain and elucidate the phenomena to which it is applied. Nature has, indeed, done much to give form and fashion to the various and divergent aspects of human life; but there are many differences existing in the methods employed by primitive, and even by civilized, peoples which can not be so resolved and explained. Another general cause comes into the field of vision, and that is the influence of innate instincts and dispositions in mankind, working in some instances toward one end and in others to an opposite or diverse result. That such native and inherent differences do exist in human kind can not be doubted, and that the influence of the same has been largely potential in producing the various aspects of early civilization is, it is believed, susceptible of the clearest proof.

Ethnic instincts also prevalent in forming mankind.

If we descend into the germinal conditions of the vegetable world we find that even the plants are, in virtue of their own nature, impressed with great

variations. The seeds taken from the same pod and planted in the same bed

MIGRATORY BARBARISM.—Camp of the Kirgheez.—Drawn by Emile Bayard.

and nurtured under identical conditions exhibit in growth and development distinct and unmistakable evidences of divergence and individuality. If we go forward one stage and begin an examination of the phenomena of animal life,

we find the divergent principle still more active and emphatic. In the multiple young of the same mother we have the variability of nature illustrated in every element of organization. The color is different. Some are black, some are parti-colored, and some are white.

The law of variation independent of environment.

procreative act, developed in the same matrix, and thrust into the world under identical conditions, are more than approximately alike.

Take, for instance, the pointers and setters in which the hunter finds so great delight. Never yet, perhaps, have two of these animals, under the strictest dis-

SEDENTARY BARBARISM.—House of Greenland Esquimau.

Similar variations, though perhaps less pronounced, will be discovered in form and function. One outgrows the other. One is of superior activity; one is hardier, and another has by nature a greater longevity. If we proceed to scrutinize the instincts and dispositions of the group the differences are still more marked. In fact, no two of these living creatures, produced by the same cipline of the same master, been developed into identity of method and character. The law of animal life in this respect is susceptible of infinite illustration. Every species of living creatures is still in a state and process of differentiation under that primal law of evolution which tends to individualize all forms of life: and as we ascend in the

Animal life under like conditions shows divergences.

scale of being the action of this law is constantly increased in vigor and intensity.

In man and among races the law of diversity prevails.

In man the presence of the divergent and individualizing tendency has been especially powerful from the beginning. The primitive races had each its special instinct and individual character. No two of them were moved by the same innate impulses or the same conscious purposes. The ends of tribal endeavor were as diverse as the methods employed to reach them. And it is the existence, radically, in the human family of this difference of instinct and motive that, combined with the powerful influence of the natural world reäcting upon the sensitive faculties of man, has produced the striking and peculiar differences, oppositions, even antagonisms, which we discover in the primitive history of mankind.

Migratory habit of tribes based on innate differences.

As an illustration of the working of these innate divergent tendencies in the human race, take the great fact of tribal migration. In the primitive history of the world no other fact, perhaps, has so great prominence as has the migratory disposition exhibited by the early races; but the working of this instinct was exhibited by them only in part. That is, there were conservative tribes and radical tribes in the primeval world, the former of which gave no sign of the migratory impulse, while the latter were swayed thereby to the extent of having no other history than that of removal.

A closer analysis will show that in the same tribe the migratory disposition would appear, seizing like an insupportable passion upon some members of the clan and household, while others would be exempt from its influence. A division of sentiment would appear among these unconscious folk leading to a radical difference of tribal action and policy. A break-up among the family would ensue, a part drifting away under the action of an instinct as natural and inevitable as that which drives the bee swarm from the parent colony to the distant forest. That is, in a given household some members, born under identical conditions with the rest, would feel the moving passion and go, while the rest, unswayed by any such instinctive motive, would remain in their native seats, unable even to appreciate the impulse and disposition which had separated their kinsmen from them. The Orient is to-day, in some sense, a residuum of those peoples over whom the migratory passion was never dominant, while all Europe and America, even to the shore line of the Pacific, is, in a like sense, the result of a certain innate radicalism which has forced the moving races further and further onward, until at last it threatens to leap the greatest of the oceans and precipitate itself again upon the East.

The moving passion varies in the same community.

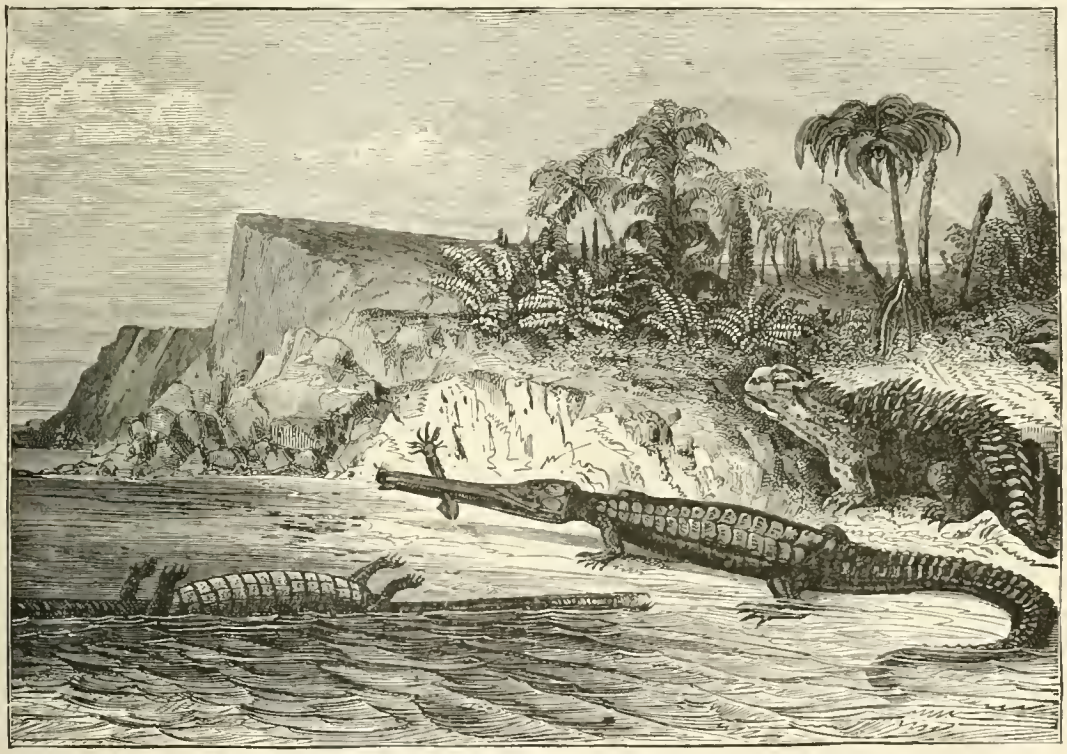
This division of mankind into a migratory and nonmigratory part must have been based, in its ultimate analysis, upon innate differences and unconscious, unreasoning impulses in those original tribes from which Asia and Europe have alike been peopled. Nor can it well be understood how the influence of the external world can adequately account for the true genesis and primal workings of this migratory habit.

CHAPTER XVI.—THE CAVE DWELLERS OF EUROPE.

LONG before the incoming of the first Aryan peoples into Europe tribes and races of men were already diffused over the country. Nor is it possible for us, in the present state of knowledge, to pierce the bottom of these human strata and find the actual beginnings of the life of man on the European continent. It is now clear that the first men roaming about in a state of savagery through the forests of Denmark, of Germany, of France, and of Britain were contemporaneous with several races of animals that were extinct before the beginnings of authentic history.

Contemporaneity of man and certain extinct animals.

For the present, archæological and ethnical inquiry has reached down only to this epoch when the aborigines of Western Europe were contemporaneous with certain extinct species of animals. It is here that we must begin our inquiry relative to the primitive life of man in those parts of the world with which we are most familiar. It is well to repeat that the period here referred to is anterior to the time when the first Aryans —the Celts, the Italic tribes, and the Teutones—made their first inroads into the West.



IDEAL LANDSCAPE OF THE AGE OF REPTILES.—Drawn by Riou.

It is only within the present century that our knowledge relative to primeval man in Western Europe has taken a somewhat definite form. Such inquiry has been impeded by many prejudices

and prepossessions of the human mind—many beliefs which are no longer tenable under the light of increasing knowledge. The labors of several eminent archæologists and ethnologists, such as Sir Charles Lyell and Sir John Lubbock in England, Messieurs Tournal and Christol in France, Dr. P. C. Schmerling in Germany, and Professors Steenstrup and Nilsson of Sweden, have brought the resources of their genius to bear upon the problem of the antiquity and primitive life of man, and have succeeded in reconstructing the primeval conditions of civilization.

Modern leaders of archæological inquiry.

the cave dwellers of Western Europe flourished. If we examine the crust of the earth *above* those strata which constitute the so-called age of reptiles, we shall find the same to be divided into two great layers, the lower of which is called the Tertiary and the upper the Post-Tertiary Period. The post-tertiary period is itself composed of two strata, the lower of which is called the Post-Pliocene and the upper the Recent, which latter embraces, in general terms, what is popularly called the surface of the earth. These two periods, the tertiary and post-tertiary, cover the geologic age of mammals. The mammalia are

Post-Tertiary....	Recent		Cenozoïc Time—Age of Mammals.
	Post-Pliocene [Epoch of the Cave Men]		
Tertiary Period. .	Pliocene.....	Newer Pliocene	
		Older Pliocene	
	Miocene.....	Upper Miocene	
		Lower Miocene	
	Eocene..	Upper Eocene	
		Middle Eocene	
		Lower Eocene	

DIAGRAM OF THE TERTIARY AND POST-TERTIARY PERIODS, SHOWING THE GEOLOGICAL PLACE OF THE CAVE DWELLERS.

In the present chapter it will be the aim to present the leading features of tribal life as the same are illustrated in the story of the Cave Dwellers of Western Europe. There was, in prehistoric ages, in many parts of the western European states a race of men of a low grade of culture who chose the caverns which nature had hollowed out as their abodes, and within these dreary domiciles enacted the domestic drama of their lives.

Place of the cave dwellers determined by geological data.

It is desirable to note the geological epoch, now well determined, in which conterminous with it, having first made their appearance in what is called the Lower Eocene and having a continuous existence through all the upper strata. Chronologically speaking, the period here referred to, beginning with the bottom of the tertiary and reaching to the present, is called Cenozoïc time. The above diagram, drawn according to Sir Charles Lyell, will show the various relations of these strata and the place of the cave dwellers.

It must be understood with reference to the above diagram that all existing species of mammals and man himself

belong to what is called the recent, or quaternary, epoch. There were, however, several species of great animals formerly well known in Europe, whose existence as distinct varieties reached up from the pliocene period of the tertiary epoch into the post-pliocene era, and in that era ceased to exist. It appears that certain climatic changes took place in the extinct mammals above referred to that the demonstration of this early form of existence on the earth has been made. The proof that man was contemporaneous with several varieties of animal life no longer present in the countries where it formerly flourished, is clear and irrefragable, and it only remains in the following pages to determine as much as we may of the primi-

Man belongs to the recent, or quaternary, epoch.

IDEAL LANDSCAPE OF THE CRETACEOUS PERIOD.—Drawn by Riou.

Europe, rendering the country untenable to these forms of life.

Now it is in this post-pliocene epoch that the cave dwellers had their career. It was at the time when the species of animals just mentioned were still prevalent in the west of Europe that the cave man had his abode there. He was their companion and fellow of the woods and caverns; and it is by the commingling of the débris and ruins of his savage life with the relics and vestiges of tive condition in which the cave man held his barbarous fortunes.

Extinct mammals coïnhabitants with man in Europe.

The savage races of men, on their way from the low condition in which they are still found in absolute barbarity to civilized peoples, pass through four epochs of development. These are determined by archæologists chiefly by the character of the implements and utensils which are fabricated by primitive peoples in the different stages of their progress. It had been found that

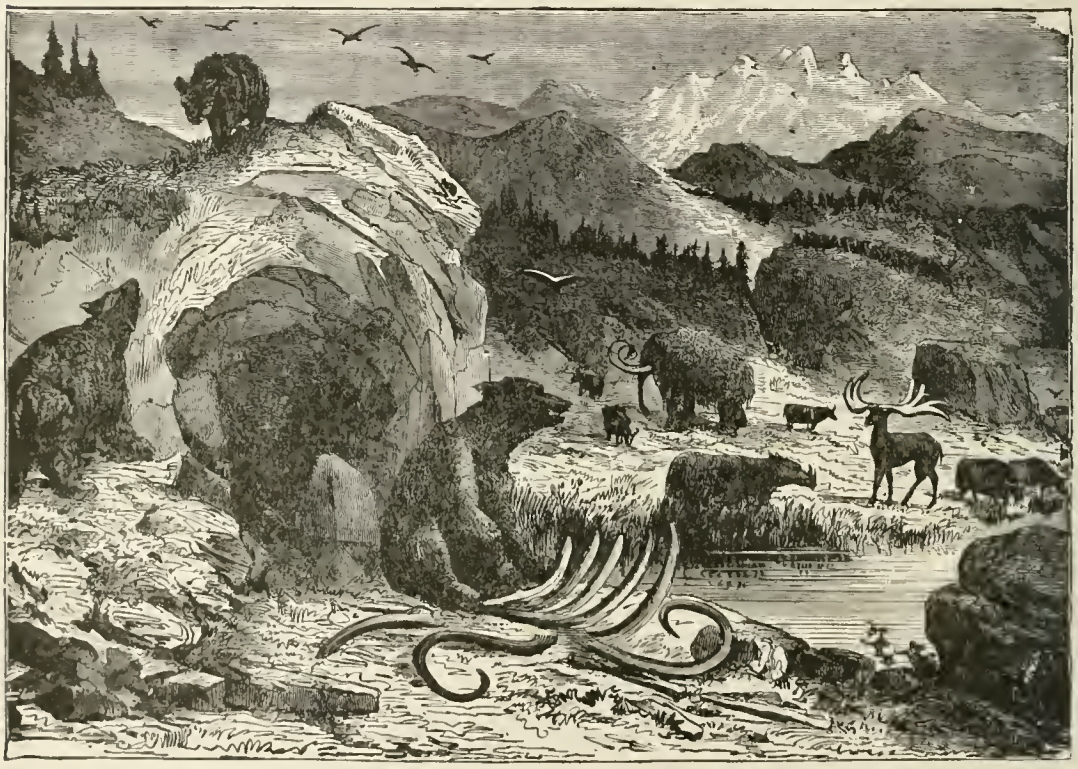
Savages pass through definite stages toward civilization.

this progress is uniform in all parts of the world, and that when barbarians are discovered in a given stage of growth the next stage may always be inferred by the general law which governs the evolution. This movement forward proceeds from a grade of life but little above mere animality, and ends with the emergence of the tribe into full historical activity.

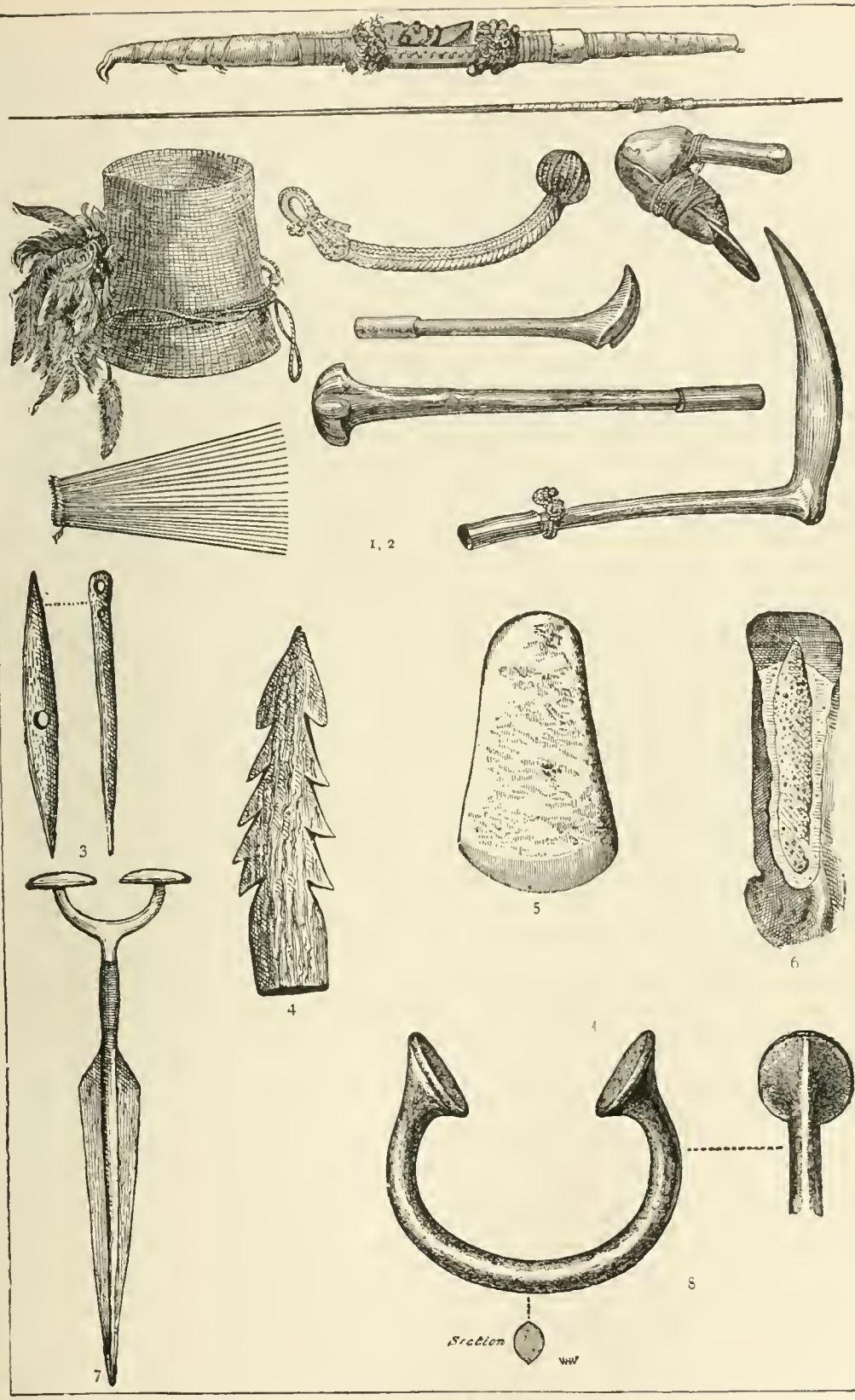
The various materials which the races of men have employed in the fabrication of tools and utensils are principally stone, wood, bone, horn, copper, bronze, and iron—in the order named. Among civilized peoples the latter metal is refined into different forms of wrought iron, cast iron, and finally the various grades of steel. The primitive man, however, begins with stone. He takes from the ground, by a sort of natural selection, certain varieties of rock formation, and by simple modifications, or even, at the first, by no modification at all, converts them into implements.

Materials employed by barbarians in making implements.

The materials first chosen are generally flint and obsidian, and the primitive stage of workmanship consists in merely breaking the substance into shape. It is this fact of breakage into form, as distinguished from other methods of fabrication, that marks the very first stage of man's development as a tool-making animal. Perhaps in no quarter of the world has a savage tribe emerged from barbarism without employing this very obvious method of producing implements. It is claimed by the most eminent naturalists that man, even in the most rudimentary stages of his evolution, has been a tool-making and tool-using animal, and that he is discriminated by this fact—strongly dis-



IDEAL LANDSCAPE OF THE PLEISTOCENE PERIOD (AGE OF MAN).—Drawn by Riou.



IMPLEMENTS AND ORNAMENTS USED BY PRIMEVAL MAN, IN THE ORDER OF THE MATERIALS EMPLOYED.

1, 2, Stone and wooden weapons of New Caledonians; 3, bone skewers; 4, harpoon of stag's horn; 5, copper celt; 6, carpenter's bronze chisel; 7, bronze dagger with iron handle; 8, iron ornaments of Africans.

criminated—from the highest grades of living beings below him.

No animal except man has been known to make or to use a tool. That is, the conscious design of doing so has never been observed in the most superior specimens of the lower grades of animal intelligence. The monkey, the ape, the ourang, the gorilla, and the chimpanzee are all in some sense club-using and club-throwing animals. They grip and swing missiles with obvious design to a certain end; but in doing so they merely seize what accident has placed within their reach, and there is no single instance recorded in which an animal has been known to *adapt* a stick or stone to any intended use. Between this accidental and instinctive employment of clubs and missiles and the conscious fabrication of a tool lies a great gap in intelligence—the gap between the instinct of the inferior and the conscious reason of the superior creature.

Man the tool-making and club-throwing animal.

Man, then, begins his career as an artisan by the making of tools and implements from the flinty forms of rock.

MANUFACTURE OF FLINT IMPLEMENTS BY PREHISTORIC MAN.—Drawn by Emile Bayard.

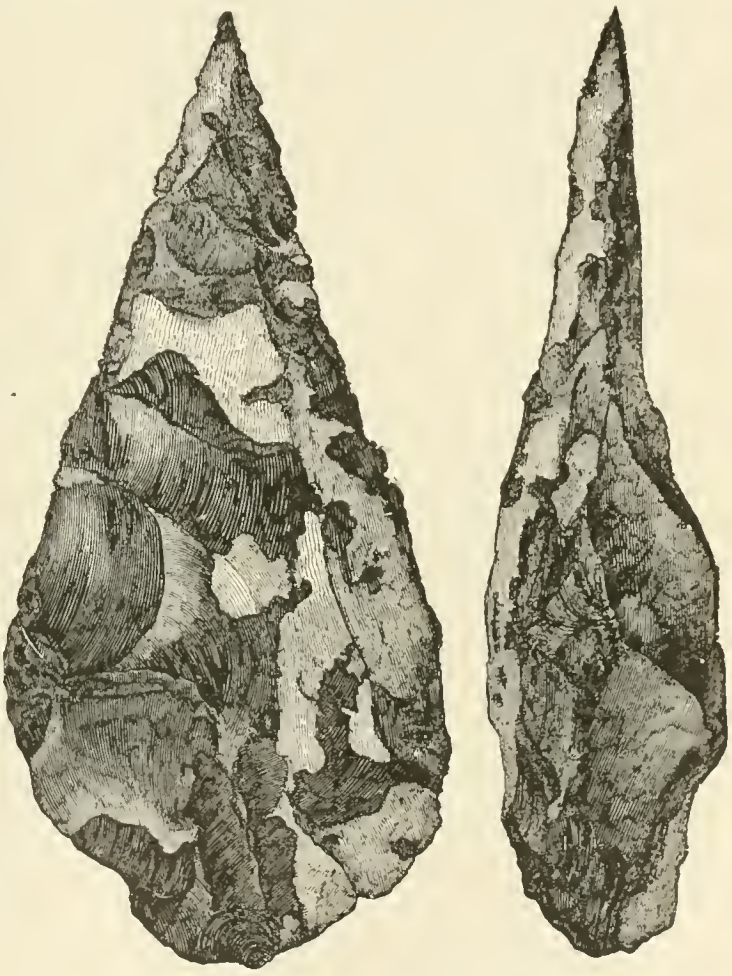
He soon discovers that this substance, by a little skill, may be broken into forms approximately adapted to his wants. Progress begins—progress in the selection of materials and progress in the methods of forming his utensils. But for a long period breakage is the general method which he employs, and this fact of fracture in the fabrication of

Artisanship begins with the making of tools and weapons.

tools is the essential feature by which the first stage of human development is characterized.

Old stone age marks first stage in human development.

This first epoch is called the old stone age, or, if we employ the scientific term given thereto by naturalists, the palæolithic age—a term derived from the Greek roots signifying the same thing. It is impossible to determine for how long a period a savage tribe will remain in this primitive stage of evolution. Doubtless the palæolithic era of development is never precisely the same in time in the case of any two barbarous tribes, but the process is the same. The time remains indeterminate. Another fact of great importance to be noted is that this primeval epoch of human growth has appeared at different times, in different quarters of the earth, as already said. It is highly likely—almost certain—that all existing peoples have, in their rudimentary condition, passed through the old stone age as the first phase of their growth into a national life; but at what era this occurred in the case of any given family of men it is impossible to determine.



PALÆOLITHIC FLINT IMPLEMENTS, FROM HOXNE.

Chronology of palæolithic epoch not determinable.

The chronology of such a development can not be ascertained or adjusted. In one quarter of the earth a savage tribe will be found at the present day in the palæolithic state of growth. In another quarter this epoch of emergence from barbarism has been passed a century, even several centuries ago, and in others we must look back through many ages if we would discover even the hint of such a stage of evolution. This is to say that the development of savage life is never synchronous among the different races, but that such development is as various in time as it is in place. The process has been going on for many thousands of years and is still going on, under our own authentic observation, in many parts of the unreclaimed continents and barbarous islands of the seas.

While this want of contemporaneity is

an embarrassment in the construction of tribal history, it is a great advantage in the actual comprehension of the methods of the primitive man. We are able today to scrutinize these methods and to observe and note the actual processes by which the tool-making animal goes forward from one stage of his development to another. In the South Sea islands the natives have been watched in the act of constructing old stone implements, and the process, withal, is very different from what might have been supposed. The savage takes a small block of flint between his naked feet and, pressing it into a certain position with his toes, drops upon it endwise a long pestle of wood in such way as to spall off a splinter from the side. The stroke is repeated, and another spall, or "flake," so called, is thrown off; and so on until, by careful chipping, the arrowhead or spearpoint or whatever it is is broken into shape. Doubtless this simple process has been practiced, with slight modifications of method, by all the savage tribes of the world, and doubtless the same manner of fabrication will continue until,

PRIMEVAL MAN—CHASE IN THE REINDEER PERIOD.
Drawn by Emile Bayard.

Habits of primeval man discoverable in his materials and arts.

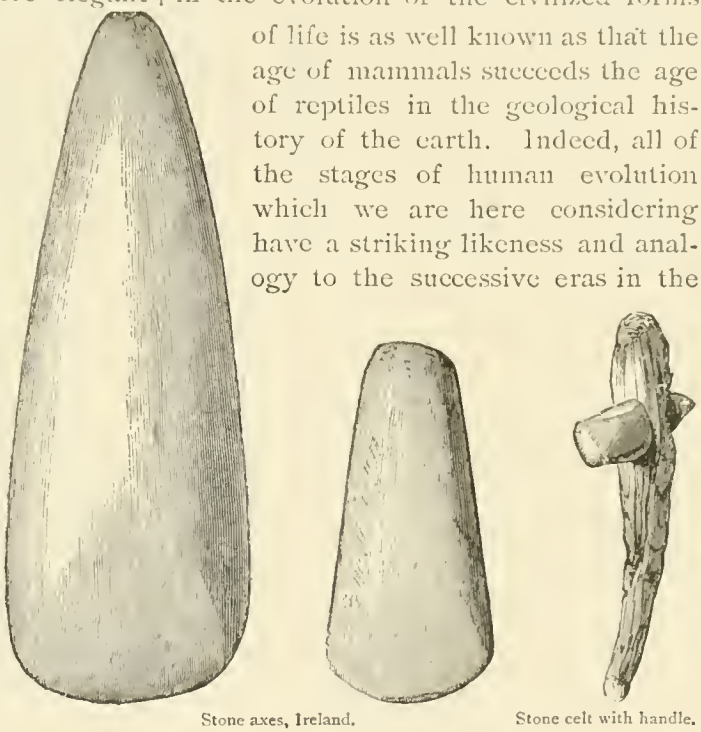
by the spread of civilization, this primitive stage of humanity shall disappear from the earth.

The palæolithic, or old stone, age at length gives place to a higher form of manufacture—a more elegant and useful method of making utensils and weapons. The primitive man, in course of time, discovers that by attrition or rubbing he can reduce his tools to a more elegant and satisfactory pattern. The forms which he has hitherto attained by the process of breakage and chipping have been only approximate to the ideal forms which he has had in mind. In the second stage of his development he labors to reach a correct outline by reducing the substance on which he is working into proper form by rubbing or grinding against some other material. The time relations of this discovery also are unknown; but that such a transformation from the rough or broken stone implements of primeval man to the smooth tools and utensils of his secondary stage of development does exist—has existed in the case of every tribe—is clearly demonstrable. Every museum, or even small private collection, of ancient stone workmanship gathered from the valleys of the European rivers, from the peat bogs of Denmark, or turned up by the plow in the open fields of North America, will show unmistakable evidences of the change which has everywhere taken place from the age of broken or chipped-off fabrication to the age of smoothed or polished manufacture.

Neolithic workmanship marks second stage of the evolution.

To this second epoch of implement-making archæologists have given the name of the new stone, or neolithic, age. That it follows the older and ruder era is clearly proved, but its duration, as in the case of the preceding epoch of broken stonework, can never be more than approximately determined. The relative place of the neolithic era in the evolution of the civilized forms of life is as well known as that the age of mammals succeeds the age of reptiles in the geological history of the earth. Indeed, all of the stages of human evolution which we are here considering have a striking likeness and analogy to the successive eras in the geological formation of our globe. The one is as fixed and certain in its laws of succession as the other, and we should no more expect to find a deviation from the orderly progress by which the savage man proceeded from the old stone to the new stone and from the new stone to the subsequent ages of his development than we should expect to find the coal measures of the carboniferous age on top of the chalk beds of the age of reptiles.

Relation of the stone epochs to eras in geology.



Stone axes, Ireland. Stone celt with handle.

EXAMPLES OF NEOLITHIC WORKMANSHIP.

There are many extraneous proofs,

moreover, that the half-barbarous peoples of the world, after passing into the neolithic age, have, in other respects than that of implement-making, entered into a wider and more complex development. It is not only in the making of tools that the savage man on his way to larger and more rational activities displays his increasing skill. All the elements of his progress are correlated and, in some sense, kept even with his rate of growth in the mere matter of manufacturing his wares and weapons. His expansion is in all directions, and it is easy to discover by evidences deduced from other sources the general course which he is pursuing toward the civilized conditions of life.

Complex development coïncident with new stone age.

Since most of the metals of the earth exist in the form of ores, which hide their actual contents from the unskilled eye of barbarism, it has happened among all the primitive races that the discovery and manufacture of stone implements has preceded by many long stages the production of metallic forms. In the cases of silver and gold, which exist native in the earth—or at least the gold—they have never been found in sufficient quantities to justify the primitive man in the attempt to make implements therefrom. These, from the rarity of their distribution, have been precious metals from the first. They were so to all the savage races who first possessed the earth, and have continued so, even

Great span between ages of stone and age of metals.

PRIMEVAL MAN.—Founders of the Age of Bronze.—Drawn by Emile Bayard.

in the powerful civilization and activities of the present. Among other metals copper, and even tin, also existed in the native form, and it is to these substances that the faculties and interest of the primeval man were directed when he came to the point of emergence from the neolithic age. He had now wrought, as much as might well be done, from the stone materials under his hand by the processes of breakage and polishing. It is evident on reflection that mere stone, such as flint or sandstone, will only bear a certain amount of artisanship. Whoever would attempt to go beyond the natural limits existing in the nature of these materials would come to an impassable barrier. He must turn, perforce, to some other substance upon which, in virtue of its own nature, his faculties might find a freer exercise. This other substance, as the primitive history of man has now demonstrated, was copper—copper first, and then tin, or, more particularly, a mixture of the two, called *bronze*.

Nothing is known of the original discovery which seems to have been made in many quarters of the earth, of the great advantage to be gained by commingling a certain percentage (about one tenth) of tin with native copper. Such a discovery, however, is very certain as a fact and very remote in its date. It is now known that the material of the weaponry of the Trojan warriors, called *chalchys* in the Homeric poems and tradition, was bronze and not iron, and the old word *æs* of the primitive

Art of compounding metals; coming of the bronze age.

MANNERS OF PREHISTORIC PEOPLES.—Feast in the Age of Bronze.—Drawn by Emile Bayard.

Latin race signified the same thing. At any rate, the succession of an age of bronze to the neolithic age is a fact well established in archæology. The barbarous and now warlike peoples of the prehistoric world made the great discovery of a hard and tenacious metallic compound, out of which they could manufacture at will substantial, effective, and even beautiful implements so greatly superior to those which they had hitherto employed as to constitute an epoch in their civilization. This discovery of bronze was accompanied with many advances in the life and manners of the people. New customs were introduced; the family was better organized, and we contemplate the beginnings of a rude society. So the third stage of the human evolution which we are here considering was that in which the half-barbarous peoples of the primitive world passed out of the new stone age into the age of bronze.

No intervening ages of copper or tin.

The inquiry naturally arises in this connection why it is that in nearly all parts of the earth the barbarous peoples seem to have passed directly from the neolithic into the bronze-making age of development. Why was it—why is it—that the primitive peoples did not pass through a clearly defined age of copper or an age of tin? Why should the great leap have been made from so primitive form of life as that exhibited in the new stone age into the comparatively complex and highly developed activities of the age of bronze? Bronze is a composite metal. We see from the perfect composition which we find in the implements which have come to us from the age of its early manufacture that the ancients understood perfectly the percentage of the different metals, and this knowledge would presuppose a long series of trials and experiments. True it is that in some quarters of the world, particularly in the peat measures of Denmark and along the shores of the great lakes in North America, many copper implements have been discovered. But these finds have been so irregular as rather to disprove than to establish the existence of an age of copper. It would seem that the primitive man has only produced tools and utensils of copper when he could not procure the necessary tin to make the compound. In general, the fact remains, archæologically and historically, that in nearly all parts of the habitable globe the various races have leaped at one stride from the making of smooth stone implements to the manufacture and use of bronze. What theory may be advanced to account for this remarkable fact in the prehistoric development of mankind?

Reasons why the age of bronze succeeds the age of stone.

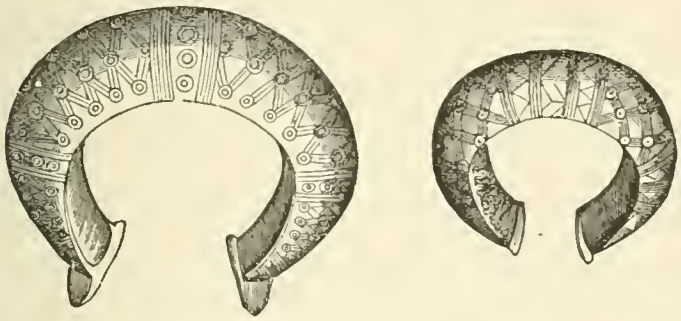
It has been suggested in answer, and with much show of probability, that the introduction of metals for tools and weapons is coincident in tribal development with the beginning of the age of aggression and conquest. This is to say that when men have once discovered and used the metals they are at that stage of tribal life in which the lust of war and conquest begins to be felt as a dominant passion. As a result of this, when the discovery of bronze has once been made, and a knowledge diffused of its great superiority over either of the component metals of which it is constituted, a bronze-bearing soldiery would at once spring into existence. Owing to the higher development and aggressive instincts of this soldiery, conquest in foreign parts would very soon ensue, and with this conquest would be carried into distant regions a knowledge of

bronze and of the method of its manufacture. This rational, even probable, explanation has been offered for the immediate succession of the bronze age to the age of stone. Tribes and races still engaged in the fabrication and use of flint implements and weapons would be at so great disadvantage in comparison with a bronze-bearing nation as to be easily overrun, and with this conquest the knowledge and practice of bronze manufacture would immediately follow.

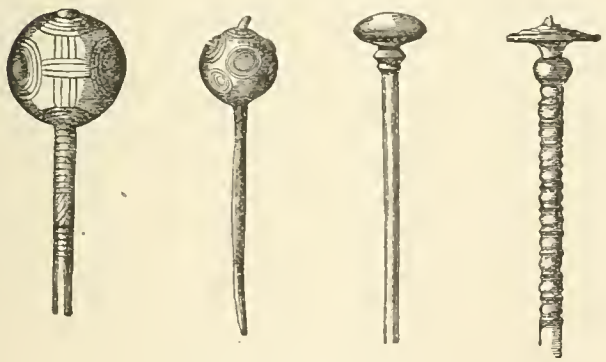
However this may be, the age of bronze has everywhere succeeded the neolithic age in the development of civilization. It is in this age that we generally catch the first authentic glimpses of the actual historical movements of men. The heroic conflicts which we see in the far horizon, the sack and pillage of Troy, the early and shadowy movements of mankind in Asia Minor, in Hellas, and in Italy, bring us, at least in tradition, into the age of bronze, and it is safe to regard this epoch in the evolution of man as the substratum of authentic history.

Historical consciousness begins with the age of bronze.

Egyptian knife.



Bracelets, Switzerland.



Bronze hairpins, Switzerland.

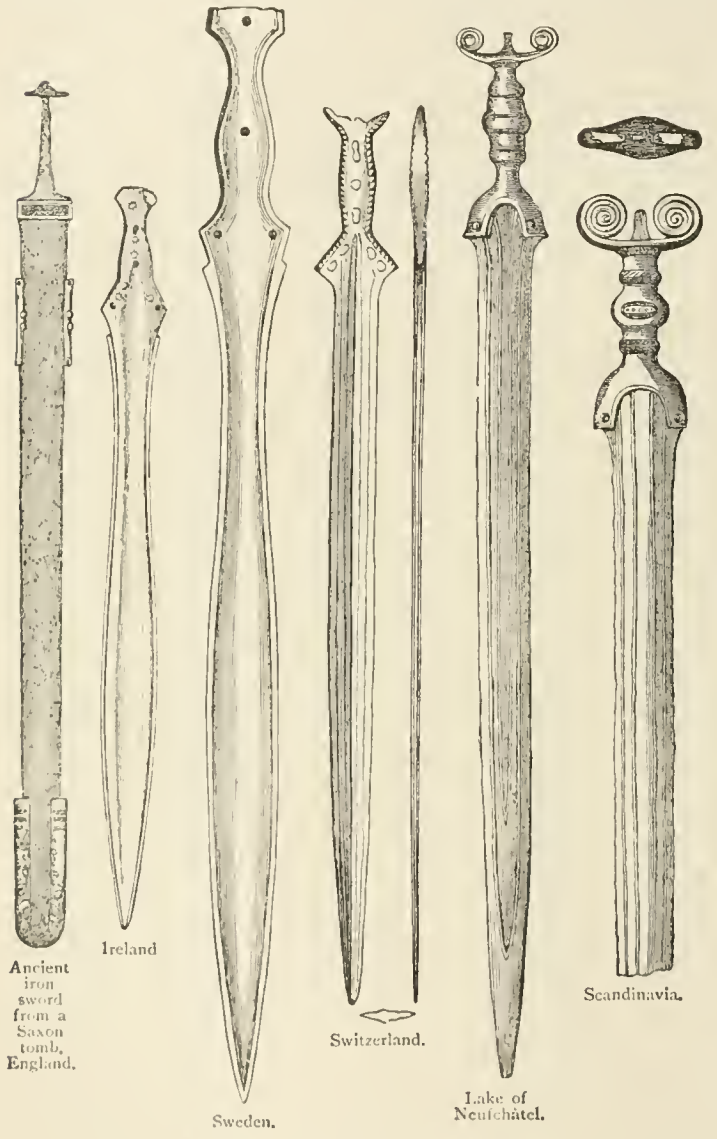
Copper spearhead.

EXAMPLES OF BRONZE WORKMANSHIP.

After a long period in bronze-making and bronze-using, the prehistoric tribes, or perhaps we should now say nations, pass into the age of iron. Iron, except in the form of meteorites, does not exist

The age of iron succeeds the epoch of bronze.

in the native state. For this reason its discovery as a metal happens late in the history of man. The extraction of iron from the ore is, moreover, exceedingly difficult even with the powerful appliances of modern metallurgy. The man of antiquity was unable to produce the requisite heat, and even had he been master of an adequate temperature he could not have conjectured by *à priori* reasoning that such a substance as metallic iron might be expected to issue from the rust-colored stone constituting the ore.



EXAMPLES OF IRON WORKMANSHIP.

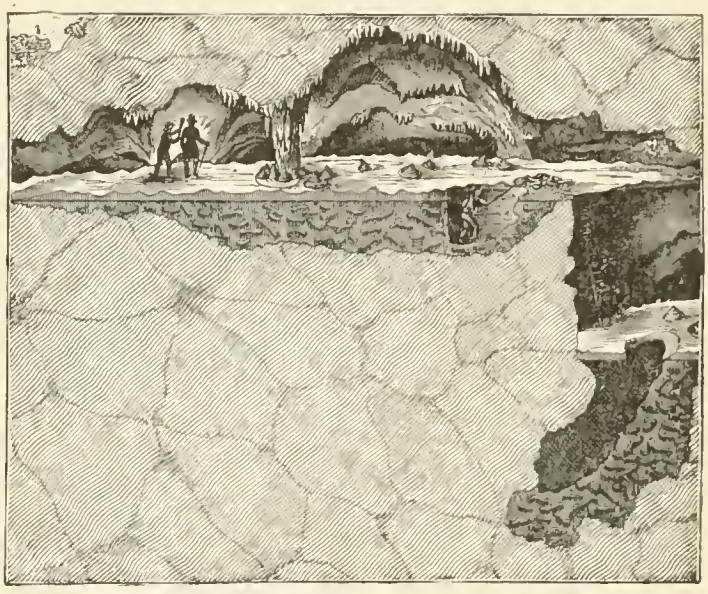
Doubtless the discovery was accidental. Indeed, traditions exist to this effect. It has been handed down that a European discovery of iron by smelting occurred in Bohemia within the historical period. However this may be, we have unmistakable proofs that somewhere in the early dawn of the Græco-Italic development in Southern Europe the discovery of the process of extracting iron was made and the fabrication of implements therefrom begun. The Greeks, at least of the post-Homeric epoch, had a soldiery bearing iron weapons, and it appears that the Romans from the first faint limnings of tradition armed themselves, for both offense and defense, with the same heavy and enduring metal. In short, the age of iron is, roughly speaking, the age of authentic history. Though the ancient Egyptians were unacquainted with iron, and though the extent of its use among the Assyrians and Babylonians has not been clearly determined, the fact remains that in general terms the manufacture of iron implements has been a circumstance coincident with the historic development of our race. We are now and have been for some three thousand years in the age of iron, and it would seem that we are

Evolution of ironwork in primeval Europe.

destined to continue in the same epoch until by a new evolution we shall pass into the age of aluminum.

Cave dwellers the most primitive of the European races.

This somewhat extended digressive study of the four principal eras of development through which the races of men have passed has been made necessary in order to a clear understanding of the true place of the cave dwellers of Western Europe. They were men of the old stone age. Their implements were all palæolithic. They flourished, or at least lived, in an age before the art of grinding and polishing utensils of stone had been discovered. This is to say that they present *the most primitive type* of mankind with which we are acquainted. Nor is it likely that ethnologists and antiquarians will ever be able to deduce from the prehistoric shadows a form of human life more nearly allied to the life of the lower animals than is that which we are now to examine.



MAN CAVERN IN GALEINREUTH, BAVARIA.

Interest of the investigation of the man caverns.

The story of the investigation of the cave dwellings in Europe is full of interest. The care and zeal with which the work has been carried forward will always elicit praise from those who are concerned to know the true story of the human race on the earth. As early as 1825 the attention of antiquaries began to be called to the fact of the mixed remains of men and animals in various caverns which had been explored for other than scientific purposes. It was not, however, until 1833 that the distinguished antiquary, Dr. P. C. Schmerling, of Belgium, forced upon the consideration of scholars the unmistakable lessons which the caves had revealed to him and his colaborers.

Character of the caves inhabited by primeval man.

The caverns in question exist in many parts of the Continent and of England. They abound in Southern France and along the borders of Belgium. They are dark grottoes in limestone rock, and seem in nearly all cases to have been selected by the cave men because of the narrowness and defensibility of the openings. In many instances the mouths of the caverns have been found closed by the very stones which the rough inhabitants rolled and pushed into place as a barrier against their enemies. The floors are generally on a lower level than the openings, which fact has led to the accumulation of thick layers of mud and débris on the bottom. Over this collection of earthy materials, mixed as they are with the relics of the human and non-human occupants in former ages, is nearly always spread a layer of that calcareous substance called *stalagmite*, deposited there in the course of centuries

by the lime-saturated exudations from the roof of the cavern. This stalagmitic floor, holding its secrets underneath, is generally quite hard, and is in many cases two or three feet in thickness. The cavern here described is typical, but is subject in different localities to considerable modifications in its character and details.

It was such a cave dwelling as this, called the Cavern of Engis, that Dr. Schmerling entered and explored in 1832.

Exploration of the Engis cavern by Dr. Schmerling.

It was situated near Liege, at the junction of the Meuse and the Ourthe, in Belgium. The story of the exploration is as heroic as the results were novel and instructive. Schmerling had to be let down into the cavern by a rope tied to a tree outside. He was obliged to slide in order to gain an entrance. Within it was as dark as night. The explorer had to creep from one apartment to another through contracted and dangerous passages. Into these spectral vaults he introduced his workmen. Some held torches while the others worked. The floor of stalagmite was as hard as marble. The philosopher was obliged to stand hour after hour with his feet in the mud while the cold exudations from the roof of the cavern dripped on his head. Finally the stalagmitic crust was broken up and the materials underneath brought to exposure. Everything was done under Schmerling's personal direction, so that no false statement or unfact of any kind should mix with the results.

The results were marvelous. Human skulls and indeed whole skeletons were found in the clay and muck under the floor of stalagmite. And to make the discovery more astounding, the bones of several species of extinct animals were found intermingled with those of men!

Carefulness of the investigation; the deductions.

It was noted, moreover, and established to a demonstration that the human parts and the animal parts were in such juxtaposition and relation as to prove the coïncident lodgment and preservation of the remains. Every fact tending to throw light on the discovery was carefully recorded by Schmerling, and in the following year he published a treatise announcing as a scientific truth the contemporaneous existence of man and the mammoth in Western Europe.

A second digression is here desirable, relating in this instance to some changes which have taken place in the fauna of the continent since the close of the pliocene era of geology. It appears that certain transformations have occurred in the climate of Europe which have made the country untenable to several species of animals formerly prevalent therein. About seventeen varieties of mammals have disappeared since the old stone age. These embrace several species of heavy pachyderms and quite a number of smaller animals, nearly all of which have their habitat either in the tropics or in regions much more tropical than any part of Europe. That these species formerly abounded on the continent is clearly demonstrable. That they could not possibly exist under present climatic conditions is also true; from which it seems clearly established that a great change toward frigid conditions has taken place in the European countries. This change, doubtless, is the very fact which has caused the extinction of the animals referred to and the perpetuation of the varieties now existing.[1]

Significance of the transformations of European climate.

[1] The theory of the existence of a tropical condition in the northern hemisphere in the age *preceding* the last glacial epoch of our planet may now be considered as a demonstrated scientific truth. See the discussion of the subject, p. *ante* 57.

The seventeen species of mammalia which have thus been extinguished by the vicissitude of climate are as follows: The cave bear; a second variety called *Ursus priscus*, or the ancient bear; the cave hyena; the cave lion; the mammoth; another species of the genus *Elephas*, called the old elephant; the hairy rhinoceros; two other species of rhinoceros; the hippopotamus; the musk ox; the Irish elk; the wild horse; the glutton; the reindeer; the aurochs, or European bison; and the urus, or primitive ox. It is thought by naturalists that some of the species here enumerated have perpetuated themselves in deflected varieties of the original until the present, but the rest are manifestly and indubitably extinct. Yet all of these animals were prevalent in the old stone age, and it is the testimony of the cave dwelling that man was their contemporary and competitor for occupancy.

Species of extinct animals associated with man.

Dr. Schmerling continued his investigations in other limestone caverns and with the same general results. In at least four or five of the caves near Liege he found unmistakable proofs that they had been used for dwellings in the prehistoric ages. Evidences of the manner of life of the primitive barbarians of Western Europe accumulated, and fact was added to fact in illustration of the conditions under which man contended with the laws of his environment before the first peoples of the Aryan race had found a footing in the countries this side of the Danube and the Rhine.

Evidence cumulative respecting the character of primeval man.

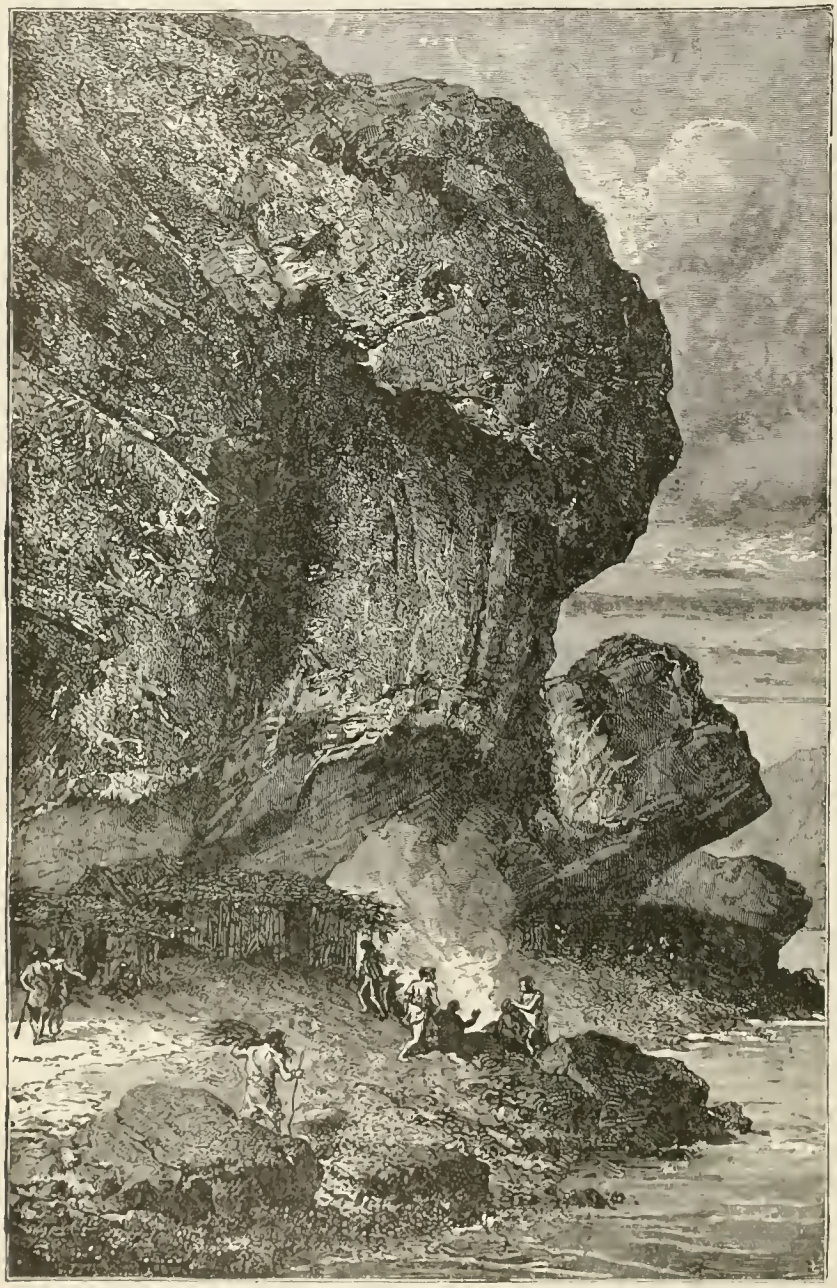
Before proceeding to note the particular contents of the various European cave dwellings, and to elucidate their significance, it will be proper to enumerate some of the principal caverns which have been explored. The Belgian government finally undertook the work begun by Schmerling, and in 1867 sent out a party of scientists under direction of the naturalist, Dupont, to carry forward the investigation. Several other caves like that of Engis were examined in the same region and the contents transmitted to museums. The cavern of Chaleux yielded in addition to its animal relics a vast number of implements, all belonging to the old stone age. That of Furfooz was almost equally rich in prehistoric materials. The cave called Frou du Frontal contained parts of thirteen skeletons. The opening of this vault was still closed with the block of stone which the cave men had used to barricade the entrance. The grotto of Aurignac, in the south of France, yielded seventeen prehistoric skeletons, but these were unfortunately lost through the ignorance of the mayor of the city. In the department of Dordogne, in Southwestern France, a number of cave dwellings have been explored with results confirmatory of those attained elsewhere; and in connection with these caverns the additional interesting fact was noted that artificial chambers connected with the natural vaults in the limestone had been excavated and used by the primitive occupants. In 1858 the philosopher, Schaafhausen, gave to the public an account of the discoveries recently made in the limestone cavern of Neanderthal, between Düsseldorf and Elberfeld, including a description of one of the most remarkable prehistoric skulls which scholars have had the fortune to examine.

Sketch of the most important cave dwellings of Europe.

Turning to England, one of the most important of the caverns formerly inhabited by men is that known as Kent's Hole, near Torquay, in Devonshire.

Exploration of the man caverns of England.

This was first explored by the scholar, MacEnery, in the year 1825. No published account of the results, however, was made until 1859, when the relics were classified by Mr. Vivian. In 1862, a remarkable hyena den called Wokey Hole, near Wells, was explored and described by William Boyd Dawkins. Meanwhile the naturalist, Goodwin-Austen, had reëxamined the cavern of Kent's Hole, and given the results in a memoir to the Geological Society. In 1858 Dr. Falconer informed the same learned body of the interesting discoveries made by himself in a cave dwelling at Brixham, also in Devonshire; and afterward a Professor Ramsay explored the grotto and verified the former conclusions respecting its contents.



GROTTO AND ROCK SHELTER OF BRUNIQUEL.—AN ABODE OF PRIMEVAL MAN.
Drawn by Riou.

Explorations were next carried into distant parts. In the grotto of Maccagnone, in Sicily, Dr. Falconer made discoveries in the same general line with those already recorded. The peculiarity in this instance was that many of the relics of men and animals were found agglutinated to the *top*, or roof, of the cavern, where they had seemingly been held in place by the action of water until

Peculiar finds in the grotto of Maccagnone.

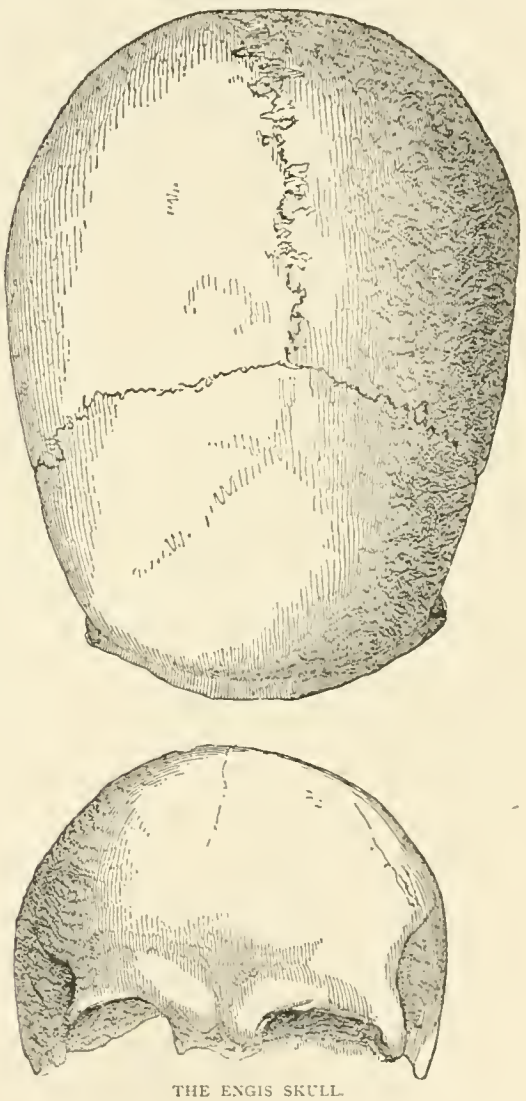
the precipitation of lime had cemented them to the ceiling! Some interesting caves have been explored at Gibraltar with results similar to those enumerated above.

It is thus that antiquaries and scholars have become acquainted with the conditions under which the cave dwellers of the prehistoric age passed their existence. It will be seen at a glance that the illustrations of the life of these primitive barbarians are drawn first from the character of the human remains themselves; secondly, from our knowledge of the animals with the bones of which the human relics are found intermingled; and thirdly, from the character of the implements and utensils which the cave men left with their own skeletons in the clay beds of the caverns.—Let us look then, first, at the remains of the cave men themselves and compare these human relics of a prehistoric epoch and people with the like parts of existing races.

Illustrations of cave life drawn from three sources.

One of the most interesting skulls which has come to us from the time of the cave dwellers is that found by Dr. Schmerling in the limestone cavern of Engis. A cast of this skull has been made and duplicates distributed to the leading museums of the world, and the most skillful naturalists have passed upon its character. On the whole, it is of smaller capacity and less symmetrical development than the average cranium of the civilized man of to-day. It is narrower in the forehead, and gives evident indications of weakness in other respects. But still it is of better capacity and much less forbidding than might be expected in a case of a prehistoric inhabitant of a cavern. The skull plate is not especially thick, and that part which is supposed to indicate animality is not more protuberant than in the case of many skulls of existing races. Professor Huxley has candidly remarked that "It is a fair average human skull, which might have belonged to a philosopher, or might have contained the thoughtless brains of a savage."

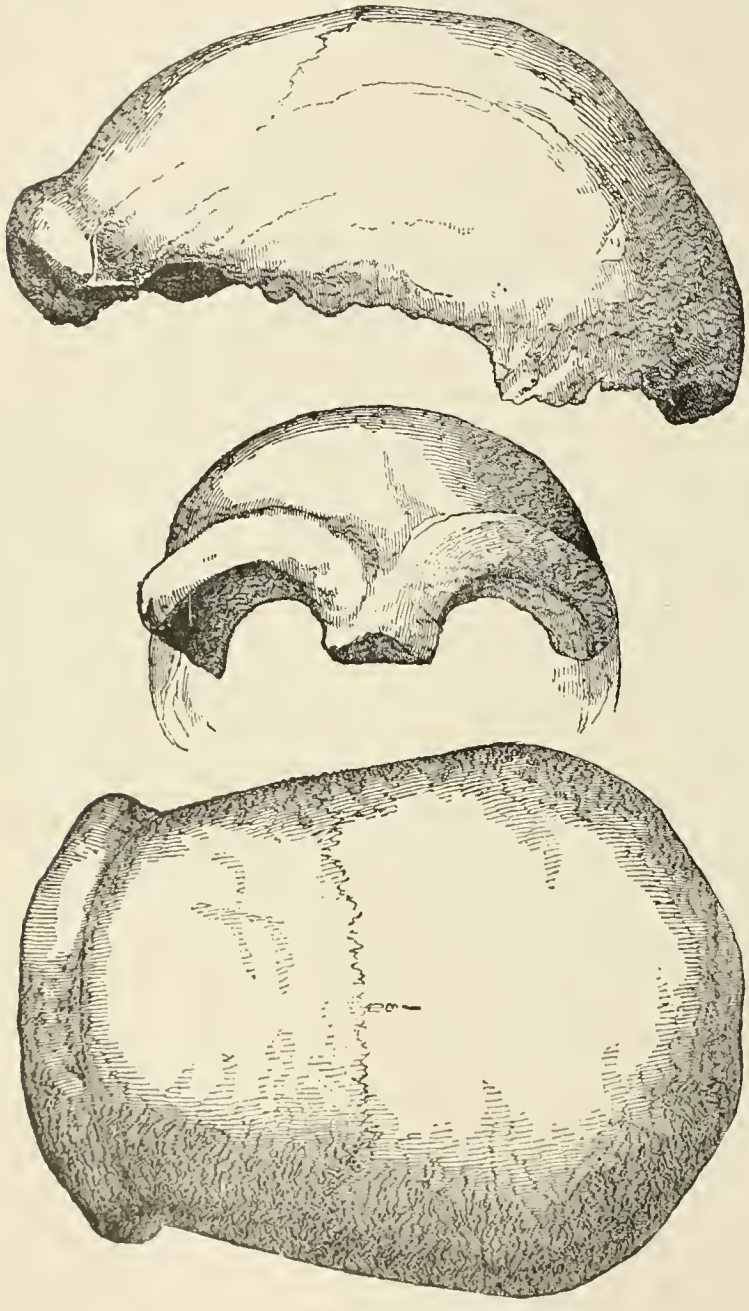
Characteristics and suggestions of the Engis skull.



THE ENGIS SKULL.

Very different from this, however, is the skull described by Schaafhausen, which was taken from the cave of Neanderthal, near Düsseldorf, in Rhenish Prussia. The latter is so exceedingly

gross in its form and structure as to suggest, almost with the force of demonstration, a type of life but little above that of the beasts of the field. The skull is almost as flat and thick and receeding as that of a gorilla. No man of any existing race, even the most barbarous, has a skull at all comparable with the Neanderthal in its small capacity, outward-sloping occiput, and great thickness of bone. The accompanying cut of an authentic cast will sufficiently illustrate the character of the skull under consideration.



THE NEANDERTHAL SKULL.

Peculiar animality indicated by the Neanderthal skull.

It is not needed in this connection to enter into details respecting the character of the other parts of the human skeletons which have been found in the cave dwellings of Europe. It is sufficient to note the fact that in general these remains depart somewhat from the highly developed and symmetrical forms of living types of men, and verge off unmistakably in some particulars toward the forms of the lower animals. The arms, for instance, of the cave men were longer than those of existing races. The hands also shared the elongation of the humerus and ulna, and appear to have had less of that lateral flexibility which distinguishes the human hand from the fore paw of the chimpanzee. The animal quality is again illustrated in the size and shape of the under jaws of the cave men. There is in this respect a consid-

Other features of the skeletons of the cave dwellers.

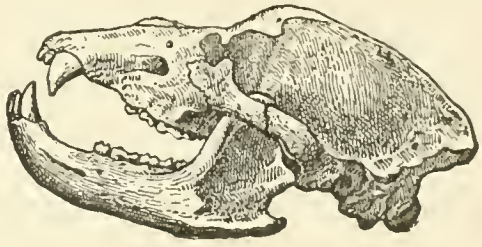
erable departure from the square, light, and symmetrical lower jaw of existing races. The teeth also of the cave dweller were, as a rule, larger and more canine than the human teeth of the present. The shape and armature of the mouth were more distinctly carnivorous than could be found in the case of any living species of men, and the bones of the body were, as a rule, stronger and redder and armed with higher processes for the attachment of muscles than we find in skeletons of the historical period. On the whole, the indications derived from the bones of the cave dwellers point convincingly to a type and manner of life considerably more approximated to the mere animal existence of the creatures with which these primitive savages contended than to the highly organized bodies and refined characteristics of living men.

Extinct animals associated with man; the cave bear.

Something has already been said of the character and place of the animals with which the prehistoric man was associated in Western Europe. It is now no longer doubted that he was a companion of the mammoth and the hairy rhinoceros at a time when these huge pachyderms still prevailed in the country. Of all the animal remains with which the bones and implements of man are associated in the cave dwellings the most numerous are those of the cave bear. Perhaps not a single cavern in which the relics of human life have been found has been explored without the discovery of the bones of this extinct animal. He seems to have roamed everywhere in the west of Europe, and to have had a special liking for those limestone vaults which the cave men chose for their dwellings. The bones of this *Ursus spelæus*, or cave bear, indicate that the possessor was sometimes killed and eaten by the cave men, who dropped the inedible parts on the cavern floor. But in other instances the bear seems to have died a natural death in the cavern which had been inhabited in the same period by men.[1]

Cave hyena and cave lion; their distribution.

The second of the extinct animals with which the cave man was most associated was the cave hyena. The bones of this creature, mixed with those of man and with palæolithic implements, are plentifully distributed in the caverns which have been above described. The animal in question did not differ very greatly from the spotted hyena of Africa and Asia, and his habits, doubtless, were of the same kind as those of his prototypes.



HEAD OF CAVE BEAR.

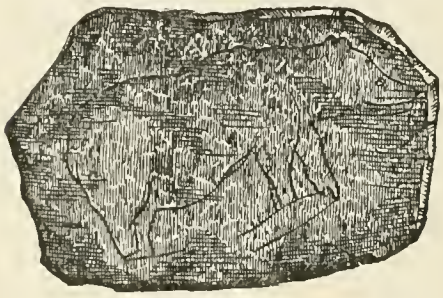
The cave lion, scientifically called *Felis spelæa*, is the third of the animals which were associated with the prehistoric man. This beast was much larger and stronger than modern lions, if we except the great beasts of Africa. The ancient animal was even more strongly discriminated from the tiger than is any existing variety of lion. The primitive beast roamed freely in France, in Ger-

[1] It is almost certain that the cave bear of the old stone age was the progenitor of the common brown bear of Europe and America. The skeleton of *Ursus spelæus* is somewhat larger and stronger than the bone-frame of his descendants, and his jaws and teeth had specific characteristics marking him as a different, or at least more primitive, type of animal; but in other respects the naturalist finds little to discriminate the ursus of the cavern from his modern representatives—little except the size.

many, in Italy, and in Sicily, and his remains have been known and classified since the seventeenth century. It is thought that the bones of the same animal have been found at Natchez, on the Mississippi, a fact which would seem to indicate a very wide distribution of this creature. Other varieties of the genus Felis also existed in the epoch of the cave dwellers, and their remains are found associated with those of men.

Great pachyderms; restoration of Elephas primigenius.

Reference has already been made to the contemporaneous existence of man and the mammoth. This creature seems to have been distributed over the whole of North America and the continent of Europe from Land's End to Siberia.



SKETCH OF CAVE BEAR, DRAWN ON A STONE FOUND IN THE CAVE OF MASSET.

From the north the mammoth crossed the Alps, and his remains are found as far south as Rome. But no traces of this pachyderm have been found south of the Pyrenees or in the Mediterranean islands. As a rule, and for very obvious reasons, the bones of the mammoth are infrequently found in the cave dwellings of Western Europe. As already noted, the entrance to these abodes were generally too narrow to admit so huge a beast; but there are instances in which the bones of man and the relics of the mammoth have been washed by water into a contemporaneous deposit in the bottom of caverns. In other localities the skeletons of the mammoth or parts thereof have been found in close and frequent association with the skeletons of prehistoric men, and in such localities the age of the deposit can nearly always be determined by the presence of old stone implements. No fact in natural history seems to be better established than the coëxistence of man and this so-called *Elephas primigenius* in most of the European countries. The story of the discovery of the hairy mammoth imbedded in a mass of frozen soil in Siberia is well known. At the beginning of the century this remarkable find was brought to the knowledge of scientific men, and a portion of the animal recovered from the dogs and wild beasts to which it had been abandoned. The mammoth was a huge pachyderm of the elephant order, with a dark colored skin, covered with reddish wool, mixed with long black bristles stronger and coarser than horsehair. A restoration, from strictly scientific data, of this great beast of primeval Europe has been effected by Professor Henry A. Ward, of the United States, and doubtless the monstrous effigy thus produced fitly represents the animal as he was in the days of the cave men of Western Europe.

Other animal remains found with those of man.

The bones of the hairy rhinoceros are found in the caverns in juxtaposition with those of men. But like those of the mammoth, the locality best suited to such association of human and non-human relics are the drift formations and gravel beds of the open country. The remains of the musk ox, or more properly the musk sheep, now limited in its habitat to arctic America and Siberia, are also found in union with the relics of the prehistoric inhabitants of the Continent, and even of England. Bones of this animal have been discovered

in Kent, on the banks of the Severn, and in the gravel beds of Avon.

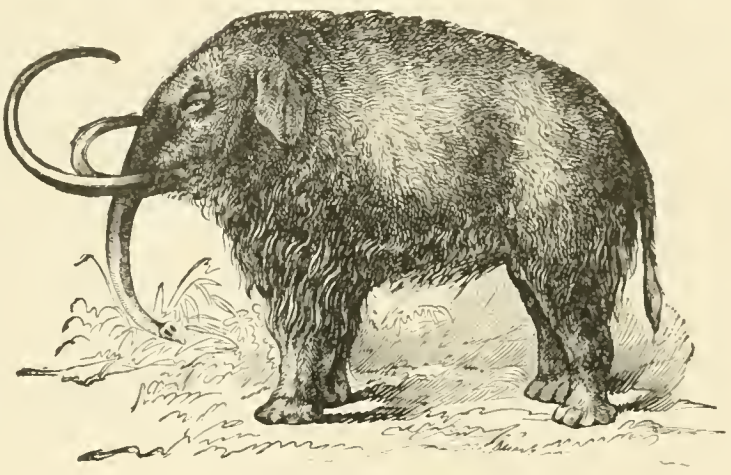
The hippopotamus also, that is, an extinct variety of the species, prevails within the human epoch, and the relics of this animal are associated with those of the cave dwellers. In at least four caverns in England bones of the ancient hippopotamus have been found. The caves of Durdham Down, Kirkdale, Kent's Hole, and Raven's Cliff, in Gower, have all yielded specimens of this extinct beast of the post-pliocene era.

The reindeer was also contemporary with the prehistoric tribes in the west of Europe. He belonged to the age of bronze. At the present this animal ranges far to the north, being wellnigh limited in his habitat to Siberia and Lapland. In America also he beats far up to the arctic regions, but in the central parts of our continent the caribou is thought to be an inflected variety of this same species of rangerine stag that has left his remains with those of primeval man in France and England. In the caverns of Wales more than a thousand horns of the reindeer have been discovered, and traces of his existence are everywhere abundant as far south as the Alps and the Pyrenees. Of the extinct animals that have flourished since the appearance of man only the mammoth and the hairy rhinoceros seem to have been older species than the reindeer. The latter appears to have had great endurance, and as late as the time of the composition of Cæsar's *Gallic War* the animal still roamed in the Hercynian forest—at least such was the information brought to Cæsar. The primitive man captured the reindeer, feasted on his flesh, took his horns for implements, and his hide for a cloak; but the animal was not domesticated in prehistoric times.

The reindeer a former inhabitant of Central Europe.

More noted still as a contemporary of the cave dwellers was the great stag called the Irish elk. This was, perhaps, the most magnificent animal of all that we are here considering. He grew to a stature of more than ten feet, and an existing pair of his antlers measures *eleven feet* from point to point! These tremendous horns were palmated like those of the American moose, and the huge creature dashing about the Irish peat bogs or through the oak woods of Britain must have been terrible, even sublime, in aspect. His remains are frequently found in the peat measures of Ireland and on the Continent, but still more abundantly in the lacustrine shell marl underlying the bog earth of the marsh lands.

Size and characteristics of the Irish elk.



MAMMOTH, RESTORED.

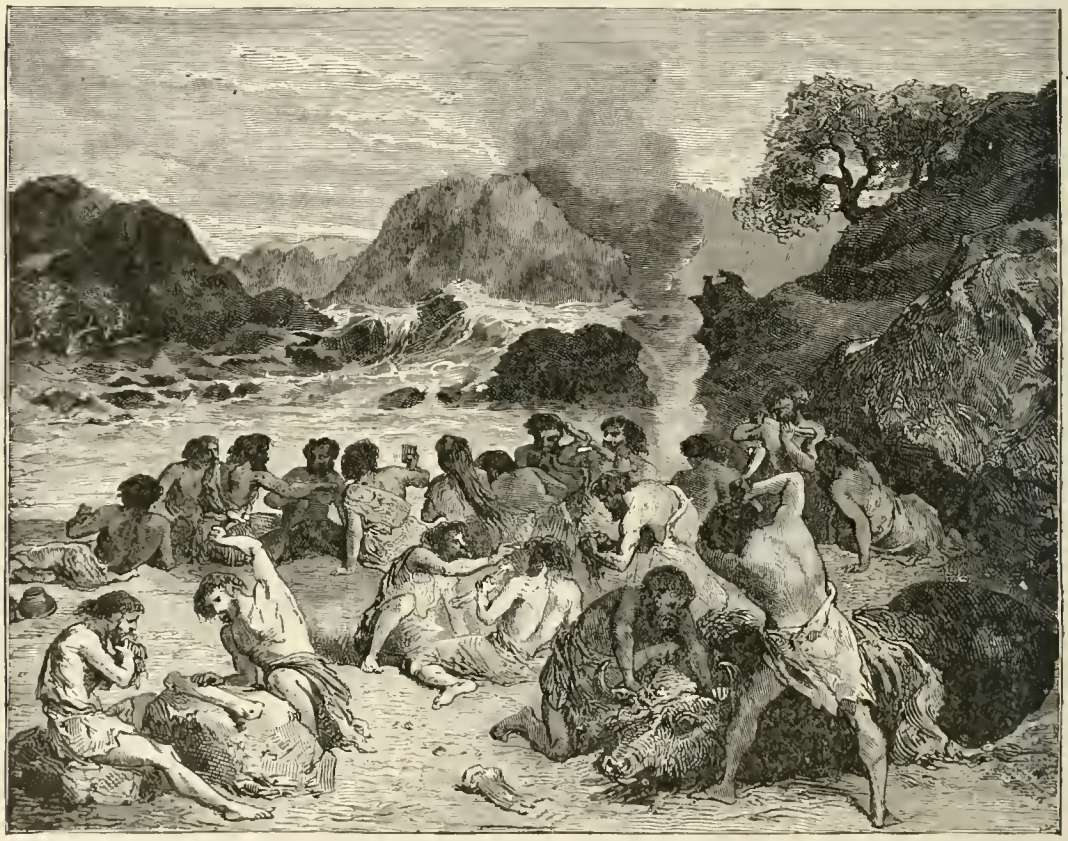
Next in order of these prehistoric animals is the glutton, called in America the wolverene. He appears to have been a contemporary of the creatures

above enumerated, and in many places to have had a particular association with man. But more important by far in such association was the aurochs, or European bison. This animal has been long extinct in France and England, and yet we have the remarkable fact of his survival in a cognate species in America. The bison priscus, or old buffalo of America, is now known to be a more ancient variety than the aurochs of Europe, and yet the latter was contemporary with man along with the mammoth and the reindeer. The aurochs was widely distributed. His remains are found in Scotland, England, France, Germany, Denmark, Sweden, Poland, Italy, and Russia. Nearly every bone cave and bed of river-drift gravel yields some relic of this heavy prehistoric animal. Oddly enough, his name is omitted from the interesting list which Cæsar has enumerated as inhabiting the Hercynian wood in the time of his invasion. But the tradition of the aurochs is given in the Niebelungen Lied and other ancient documents.

The prehistoric bison of Europe and America.

It seems that the extinction of this animal is traceable wholly to the aggressions of civilization and not to any vicissitude of climate. The European bison is said to have been seen in Northern Prussia as late as the latter part of the eighteenth century, and it is believed that a precarious existence is still maintained by the species in some uninhabited parts of Western Asia. An interesting episode is furnished in the fact that in

Late extinction of the European buffalo.



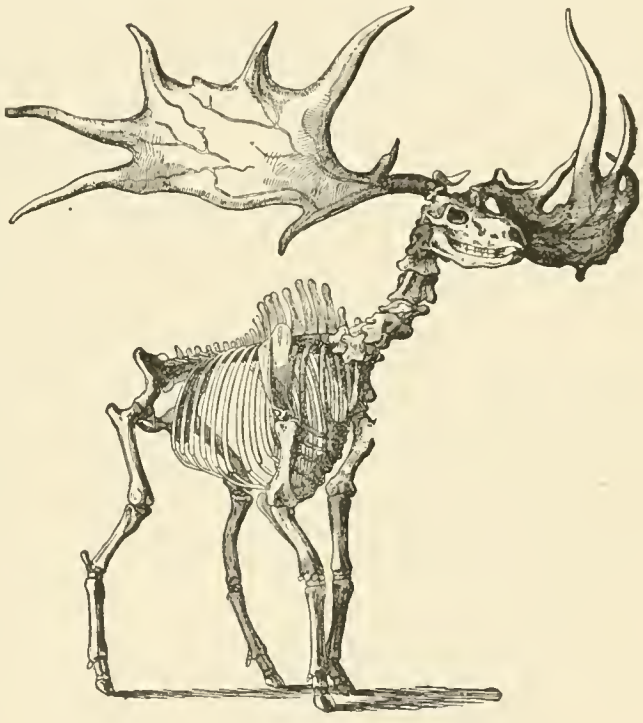
FEAST DURING THE EPOCH OF THE REINDEER.—Drawn by Emile Bayard.

the Polish revolution of 1831 a herd of more than seven hundred bisons which had been preserved by the Emperor of Russia in the great forest of Lithuania was attacked by a body of the insurgents, and a hundred and fifteen of them slaughtered. A remnant of this herd exists to the present day in the same forest.

The urus, or primitive ox, seems to have been limited in his range to the European continent. No traces of his existence have been found in America and none in Asia, but remains of the animal are plentifully distributed in England, Scotland, Denmark, France, Germany, and Sweden. Bones of this species have been discovered in Northern Africa. In the museum of Lund a skeleton is preserved, in one of the vertebræ of which a wound, made, as is believed by Professor Nilsson, by a flint weapon, is plainly traceable. Cæsar, in the sixth book of the *Gallic War*, gives a full account of the urus as follows: "Of these animals, there is a third species which are called uri. They are in size only a little inferior to the elephants; in color and appearance and form they are bulls. Great is their strength and great their velocity. Nor do they stand in dread of either man or beast. The inhabitants take and slay them by skillful contrivance and pitfalls." The tradition of the urus is also preserved in the Niebelungen. The species has been like the aurochs, especially persistent, and has only given way before the invincible pressure of civilization. It is said that wandering groups of uri were known in Germany as late as the sixteenth century, and there is little doubt that the wild bulls which ran at large in the neighborhood of London as late as the twelfth century were identical, at least in descent, with the uri of the Continent. Nor would it be possible to say to what extent the blood of the extinct animal courses in the various breeds of cattle at the present time.

Primitive ox of Europe; Cæsar's description.

Thus we see that while some of the



THE IRISH ELK (MEGACEROS HIBERNICUS).

prehistoric animals above enumerated are indubitably extinct, others have in some sense transmitted themselves into the historic era. The mammoth and the hairy rhinoceros long since ceased to exist in the countries which we are now considering. But the cave bear, not unlike the grizzly of the Yuba mountains, has doubtless left reduced varieties of himself to the present time. So also the reindeer, and, as we have

Some prehistoric animals survive in living species.

just seen, the aurochs and the primitive ox. This is to say that if we look at the current of prehistoric animal life in Western Europe, and consider it as a river flowing over a plain and dividing into multifarious streams as it flows, we shall see some of these streams sinking anon into the sand and disappearing forever, while others maintain for a while a straggling and reduced volume until they in turn disappear. A few currents flow still further and are found precariously wandering on the surface even to the present day. The main point to be borne constantly in mind in this connection is that far back in the midst of these branching currents of animal life primeval man held his career as contemporary even with the oldest divisions of the stream.

From the earliest appearance of man on the earth, he seems to have had a disposition to subordinate and use the various animals with which he has been associated. According to the sacred writers, he was to have "dominion over the beasts of the field and every creeping thing." Certainly he has shown a disposition to subdue and possess a great number of the wild creatures of his habitat. His success, however, has been but partial. Some of the animals have spurned his control and escaped from him. The struggle for mastery has gone on until an epoch in civilization has been reached in which man has given his energies to the subordination of the forces of nature rather than the forces of animal life.

Disposition of man to domesticate wild animals.

The disposition to tame the wild creatures has been deflected into another form of activity. The present conflict of man with the animals tends to destroy rather than to domesticate. From the earliest stages of history and tradition, however, some of the living creatures with which man has been associated have been tamed and brought under his control. Even the archæological and inferential sort of history which we have been developing in the preceding pages shows conclusively that in the most primitive condition of human life several of the animals were domesticated and used by primeval man at his will. It is interesting in this connection to note what these domesticated animals were under the dominion of the cave dwellers of Western Europe.

Early date of the practice of domestication.

First of all, the men of the caverns had tamed the dog and associated him closely with their abodes.[1] It appears that wild dogs, to say nothing of wolverenes, abounded in some localities, but as a rule the canine bones which are found associated with those of men are of domesticated animals, and their abodes seem to indicate that the cave man was accompanied by large packs of

The dog the first of the domesticated animals.

[1] It will interest the reader and strengthen his confidence as well to know *how it is* that the naturalist is able to distinguish the bones of a wild animal from those of one domesticated. To the man of science the case is perfectly clear. The characteristics of the wild and the tame skeletons are so well marked as to leave no doubt whatever relative to their respective antecedents. The bone of the animal under domestication becomes smooth, and the channels on the surface through which the veins and arteries and nerves are distributed become so shallow as to be no longer traceable. The processes and spines which nature has provided for muscular attachments are at the same time reduced in height and size, and the whole appearance of the bone surface becomes as distinctly unlike that of the corresponding species of the wild animal as the living aspect of the domesticated variety is unlike the ferocity and vigor of his untamed kinsman. The accompanying cut of the vertebræ of a cow and of the corresponding part from the back of a buffalo will sufficiently illustrate the marked difference in the bone structure of wild and domesticated animals.

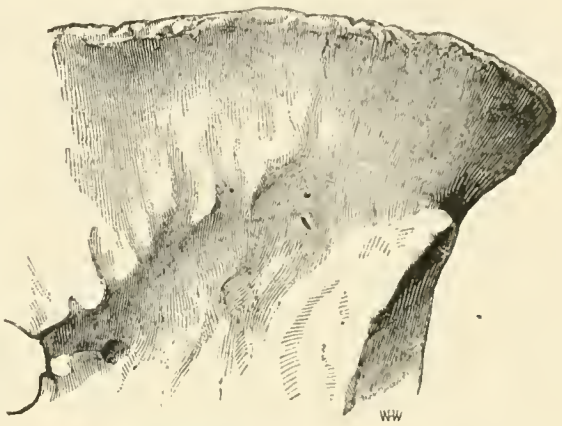
dogs. He used them not only in his contests with wild animals but also for food. The canine bones which are found in the caverns show conclusively that they were broken and sawed open for the marrow in the same manner with the bones of other species. The goat also was almost universally domesticated, but, contrary to what might have been expected, the sheep in many parts was still abroad with the wild animals.

It is doubtful whether any inclosures, properly so called, were used by the cave dwellers, and it appears that sheep, by their native instincts, are less disposed than goats to accept the control and protection of man—more disposed to straggle off and revert to the original type. The same remark may be applied to the cat in contradistinction to the dog. The former, though regarded as a special pet of the human family, seems, after all, to form only a strong local attachment for a given *place*, but very little attachment to human beings. The dog, on the contrary, attaches himself to his master, and not to any particular place. He follows his master to the end of the earth, and cares but little for his own kennel as compared with his master's company. It seems that the goat has much of this same instinct; and for this reason, doubtless, the prehistoric barbarians of Western Europe held the goat almost always in domestication. Though sheep were domesticated and used for both their flesh and their fleeces, they were nevertheless wild animals rather than tame.

Disposition of certain animals to domesticate.

The same classification must be applied to the primitive cattle. It appears that in some places kine were at least partly domesticated, but, as a rule, they ran wild. This may be said also of the swine of the prehistoric age. It is in evidence that droves of domestic pigs were owned and driven from place to place by the barbarians; but for the most part the hog had his native lair in the forest, and was very little subject to domestication. These wild swine were frequently pursued and captured and used for food by the cave men, as is attested by the broken and sawed bones which are left in the caverns and gravel beds. As for the horse, he also ran wild, and it does not appear that in any part of Western Europe, at least in the

Many beasts partly tamed by prehistoric races.



PART OF THE VERTEBRA OF A COW.

CORRESPONDING PART OF VERTEBRA OF THE BISON.

old stone age, this noble animal had been reduced to domestication. But his flesh was eaten in common with that of many other animals.

Eating habits of the aborigines of Western Europe.

As a general fact the cave dwellers were exceedingly carnivorous in their habits. This is the one characteristic of their method of life which discriminates them so strongly from the Aryan household described in the preceding chapter. It is doubtful whether by the ruder type of the cave men the soil was cultivated at all. They availed themselves of many vegetable growths, ate masts and roots and wild fruits of the woods, and even devoured the barks of trees; but it does not appear that the rational cultivation of the soil was practiced or even known by these rude barbarians. They lived for the most part on the flesh of animals, and this was generally torn from the skeleton and eaten raw. As already remarked, the marrow of the bones was sought with avidity, and scarcely a single fragment was left unexplored for this delicacy. In the rude life of the cavern the bones were simply broken or crushed by some of the heavier stone implements employed by the cave dwellers. But the more approved method was to cut the bone longitudinally with a stone saw. Specimens of this work are plentifully preserved in nearly all the principal museums of the world. The bones of the ox, the sheep, the goat, the reindeer, the fox, the wolf, and especially of the dog, are found treated in this manner in the débris of the caverns. Nor is there any mistaking the purpose and intent of the barbarians in this work.

HUNT OF THE WILD BOAR.—Drawn by Emile Bayard.

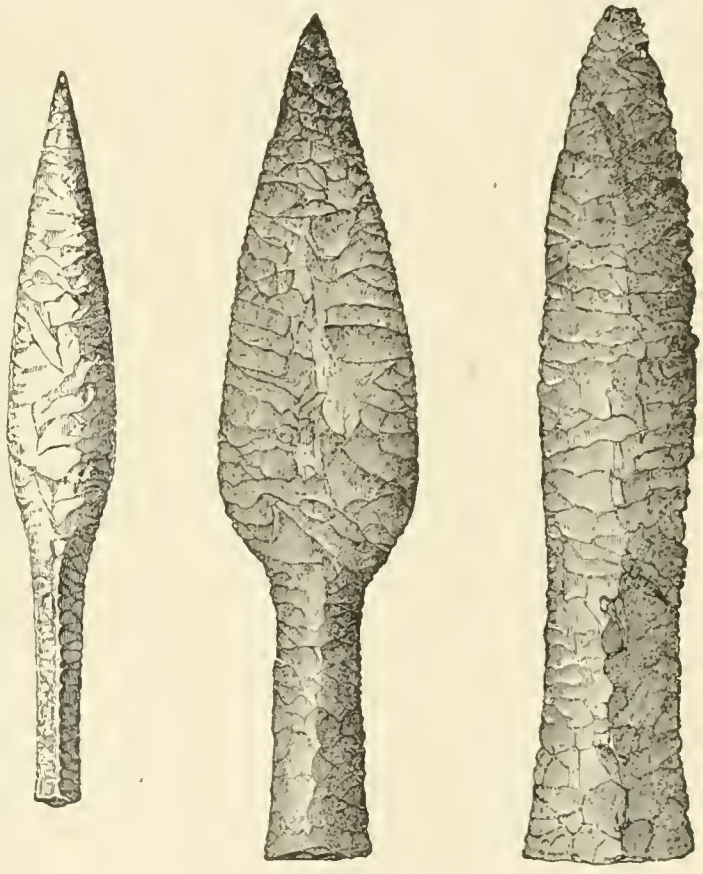
We have now, in our consideration of this archaïc type of man in Western Europe, arrived at the point where the implements and utensils of his household

may be appropriately considered. The one thing to be remembered and repeated with emphasis in this connection is that the cave dwellers flourished in the old stone age. Only in few instances and in peculiar localities does this primeval form of human life seem to have extended upward from the palæolithic into the new stone epoch, and still less frequently into the age of bronze. It must be constantly borne in mind that, on the zoölogical side of this inquiry, the primitive man of the western parts of Europe was allied with the extinct species of animals described in the preceding pages; that in his geological relations he held his career in what is called the post-pliocene, or quaternary period, and that in his archæological relations he was associated with the old stone era. We come, then, to consider some of the details of his implements and household apparatus.

Place of the cave men zoölogically and geologically.

The utensils and weapons of the cave men were made from flint and analogous varieties of stone. They were broken and chipped into form after the rude manner described on a former page. Those who have given little attention to the subject and have seldom visited our museums of archæology can but be astonished at the great abundance of old stone implements which have been recovered from the age which we are here considering. In the museum of Copenhagen, for instance, there were, in the year 1864, one thousand and seventy flint axes and wedges, two hundred and eighty-five broad chisels, two hundred and seventy hollow chisels, three hundred and sixty-five narrow chisels, thirty-three hollow narrow chisels, two hundred and fifty poniards, six hundred and fifty-six lanceheads, one hundred and seventy-one arrowheads,

Extent and variety of prehistoric implements in museums.

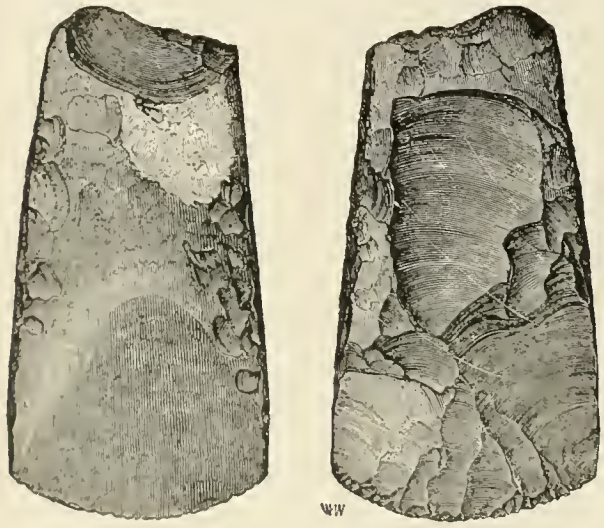


PALÆOLITHIC DAGGERS.

two hundred and five half-moon shaped implements, seven hundred and forty-six pierced axes and ax hammers, three hundred flint flakes, four hundred and eighty-nine sundries, three thousand six hundred and seventy-eight rough stone implements from the shell mounds of Denmark, one hundred and seventy-one bone implements, one hundred and nine other bone articles from

the shell mounds, making in a single museum a total of eight thousand seven hundred and ninety-eight specimens illustrative of the age of stone.

The Danish museums contain an aggregate of about thirty thousand stone implements, and these are but a fragment of the great collections of other countries. The museum of the Royal Irish Academy contains seven hundred flint flakes, five hundred and twelve so-called "celts," or axes, more than four hundred arrowheads, fifty spearheads, seventy-five scrapers and



PALÆOLITHIC AXES FROM THE SHELL MOUNDS.

many sling-stones, hammers, whetstones, grain-crushers, etc. The great museum of Stockholm contains upward of fifteen thousand specimens illustrative of the weaponry and utensils of the age of stone. Indeed, in all parts of the civilized world, in public and in private collections, vast numbers of a still vaster aggregate remaining in the earth of these stone-made relics of the prehistoric times have been gathered, and it is not to be doubted that other museums still more capacious could easily be filled with like materials.

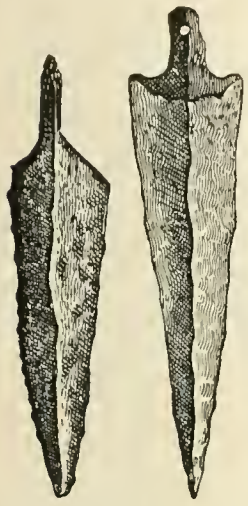
Perhaps the most important single implement used by the primitive inhabitants of Europe was the stone ax. This tool, even from the palæolithic era, had a certain rude approximation in shape and character to the modern ax of steel. But the stone implement was generally fastened to the helve by a much more primitive method than that employed in the case of metallic axes. The stone ax, after having been chipped into proper form from a block of flint, was generally inserted in the limb of a tree, broken or cut off to the proper length. The blade was fastened in the opening by the binding around of strips of rawhide or the tendons of some strong animal. There was great variety in the size and shape of the implement and equally multifarious uses. The barbarian seems to have employed his ax for everything. When we consider the rudeness of the tool and the manner of its mounting, it seems almost incredible that it could have been so effective in the hands of those who used it. It is well known that these prehistoric people cut down large trees, sharpened heavy piles, and accomplished other astonishing feats with their rude stone axes. Doubtless the time required to do such work was considerable, and it is known that in many cases fire was employed to assist the process. The barbarian used his ax, as already indicated, to split or burst the bones of the animals whose flesh he devoured and whose marrow was regarded as a morsel.

Stone axes, and the work accomplished with them.

The cave dwellers and their contemporaries also manufactured and used a great variety of knives. The patterns of these were almost as variable as in the case of modern cutlery. Sometimes

Flint knives, and the manner of their production.

the knife was double, having a blade fixed in either end of the handle. Generally it was single bladed, and in a great many cases had no handle at all. The blade was produced from a flake of flint or obsidian, and was chipped into form after the manner already described. It must ever be a matter of astonishment that the savage man of the prehistoric ages was able to produce such fine effects by the mere breakage and chipping of such material as flint. Next among his implements may be mentioned the chisels which he used and which are also of various patterns—some narrow, some broad, some hollowed along the center of the shaft, and others convex. It was a general peculiarity of these stone implements that the cutting edge was curvilinear, either gibbous or semilunar in shape. This is true of the edges of the axes and chisels and adzes and knives, and indeed nearly all lithic implements and weapons.



FLINT ARROWPOINTS FROM THE BONE CAVERNS.

Perhaps no complete enumeration can be made of the tools and utensils in use among the prehistoric peoples whose manner of life is here delineated. The variety was wellnigh as great as that in the shop of a modern artisan. There were sledges and hammers and saws, wedges and celts, spearheads, arrowheads, javelinpoints, daggers, poniards, many varieties of cutting instruments after the general pattern of the knife, scrapers, picks, many kinds of hatchets, sling-stones, weight-stones for nets and fishing lines, harpoons, awls, lapstones, and an infinity of the so-called flakes. Nearly all the varieties here enumerated can be seen in any ordinary museum of antiquities, and the beholder, by their inspection, can but feel himself drawn near to the prehistoric race of men by whose hands these implements were wielded.

Great variety of prehistoric tools and weapons.

It is not intended in the present work to enter into the details of archæology. It is not even the purpose to give any elaborate account of the slow transformation by which the tribes of the old stone age passed by evolution into the new stone age and thence into the age of bronze. It is sufficient to note that the general manner of life of the cave men and their contemporaries was that of hunters and fishermen, men of the woods and stream. Doubtless it would be improper to speak of the "social system" of a people that had no society at all. The cave dwelling would seem to indicate an exceedingly solitary life. It appears that in the case of the larger caverns quite a band of the barbarians

Manner of life without and within the man caverns.

FINE PALÆOLITHIC ARROWPOINTS.

lived together. The abundance of bones and relics is much greater than we should expect in the case of a single family or even five families in the same abode. Nor should we forget that what we may call the waste of implements would be much less among a people where a single tool was of so great importance than in a modern household where an implement can be immediately replaced.

PREHISTORIC MAN OF THE NEOLITHIC AGE.
Drawn by Emile Bayard.

The care which these people bestowed upon their utensils is well illustrated in the distance to which they were carried in the case of migration. Nothing is more common than to find flint implements and weapons at a distance of hundreds of miles from the quarry whence the material was taken. The man of antiquity sought assiduously for the best quarries and ledges from which to take the materials of his manufacture, and the old pits which the prehistoric folk dug in the chalk beds, in order to get at the layers of flint underneath, are plentifully distributed in parts of England and France. There appear, moreover, to have been seats of manufacture, sometimes in connection with the quarries and sometimes in other places. This fact would indicate a rude sort of commerce in implements. But

over and above this circumstance the fact remains that the barbarians themselves clung to their tools and weapons with great tenacity, carried them to great distances, and only parted with them by the necessities of accident or death.

Care taken of utensils; places of manufacture.

We are thus enabled to form a true concept of the prehistoric man of Western Europe. In stature, he is believed to have been considerably larger than the average man of to-day. His bones have greater length and strength, and his proportions indicate a rather gigantic form. Doubtless he was brutal in appearance, with hair growing low upon his forehead and an animal leer on his features. Whether the day-dawn of the higher sentiments, the nobler aspirations, had as yet arisen in his spirit we can not know. But that he had in him the potency and germ of human greatness, the possibility of light and freedom and knowledge, can not be doubted or denied. He was the gross substratum of that human life which even in the present day is but half-refined from barbarism and half-redeemed from the heavy weight of brute passion and animality.

Stature and personal characteristics of the cave man.

CHAPTER XVII.—LAKE DWELLERS OF SWITZERLAND.

THE delineation of primitive life given in the preceding chapter represents but one of several types of human existence in the prehistoric ages. The men of the caverns were a single branch of the barbarians who inhabited Western Europe in the old stone age. It is not intended in the present work to describe all the aspects of half-savage life which present themselves to the antiquarian and ethnologist, but to discuss only a sufficient number of the primeval tribes and their methods of development to enable the reader to form an adequate idea of the whole. In the current chapter we shall turn to two or three other forms of aboriginal European life, and present them in the light of what is known or reasonably inferred concerning their career. First of all, attention will be called to the lake dwellers of Switzerland and other similar situations.

It must be known that the bodies of fresh water on the European continent have considerably diminished in area and volume since the age of the mammoth and the reindeer. The circumference of all the lakes has contracted, and the surface has sunk to a lower level. The extent of this diminution has been much greater in some localities than in others. The fall of a few feet in the level of a lake will sometimes, owing to the flatness of the shore, expose a considerable area of land that was hitherto submerged, whereas if the shores be precipitous, a fall even of many feet will make no perceptible difference in the position of the water line.

General contraction of the fresh-water areas of Europe.

Both of these conditions have occurred in different localities. In some places around the margin of lakes acres and even square miles of territory are now dry land that were formerly under water.

Character of the debatable margin around lakes.

More frequently this recently exposed strip exists in the form of marshland or bog, but half reclaimed from its ancient submergence. Wherever the lake is situated in a flat, open region, this condition of a fenland border exists to a greater or less extent. Lagoons and marshes, sometimes grown up with trees and sometimes covered with the reeds and grasses peculiar to the region of the bog, will be noted in close proximity to the lake itself, and the observer will readily note that the addition of a few feet to the water level would restore the lake to its primitive borders covering the lowlands.

In other places, particularly in the mountainous regions, the water line of the lakes has had less fluctuation. Here the waters are contained as in a cup of stone, and the rising and sinking of the lake surface has widened and contracted the border line but little. In almost every situation, however, some fluctuation has occurred, and even a single unusual season, whether it be of rain or aridity, will be clearly perceived in the narrower or wider limit of the lake. This is to say that around all of the fresh-water bodies is a debatable shore, of greater or less extent, which has been in turn submerged and uncovered according to the humidity or the dryness of the epoch. More particularly has the gradual recession of all superficial waters into the inner parts of the earth told upon the lakes, especially those of small extent, in reducing their area and depth.

The primitive European tribes, at least that portion of them which we are now to consider, were by instinct and preference led to establish themselves in proximity with great collections of water. The advantages of such situations are obvious. If the water be fresh it furnishes to man one of the prime essentials of his existence and many conveniences. It gives him, moreover, from the depths a multitude of fishes, easy of capture and good for food. If the water be salt, though its direct use by man is impracticable, it nevertheless yields him a great store of shellfish and many valuables besides. We are here to note what was done on the margin of the lakes.

Certain primitive tribes chose the lake shores for residence.

The winter of 1853–54 was one of excessive rigor in Europe, but of small precipitation of rain or snow. This was followed the next summer by a season of unusual drought. Since the year 1674 no parallel had been furnished to the draft which was thus made upon the volume of the lakes and the paucity of the return which nature made thereto. As a result, the level of the mountain lakes in Switzerland fell off many feet, and quite an area of the bottom was exposed as terra firma. It was here that the discoveries were made by the antiquary, Dr. Keller, and other explorers which led to the reconstruction of that type of prehistoric communities called the Lake Dwellings and Villages.

Great subsidence of the Swiss lakes in 1853-54.

In different ages and in different quarters of the world men have frequently adopted the plan of constructing their abodes above the surface of the water near the shore. The plan is to build a platform, supported by different methods, and on these to rear the huts in which the people lived. Between the platform and the shore communication is easily effected by some narrow structure which is defensible. In the fifth chapter of the book called *Terpsichore*, in Herodotus, we have the following paragraph descriptive of such dwelling places. The author is describing the manners and customs of the

Situation of the lake dwellings; account of Herodotus.

ancient Pæonians: "Their dwellings are contrived after this manner: planks fitted on lofty piles are placed in the middle of the lake, with a narrow entrance from the main land by a single bridge. These piles that support the planks all the citizens anciently placed there at the public charge; but afterward they established a law to the following effect: whenever a man marries, for each wife he sinks three piles, bringing wood from a mountain called Orbelus: but every man has several wives. They live in the following manner: every man has a hut on the planks, in which he dwells, with a trapdoor closely fitted in the planks and leading down to the lake. They tie the young children with a cord round the foot, fearing lest they should fall into the lake beneath. To their horses and beasts of burden they give fish for fodder; of which there is such an abundance that when a man has opened his trapdoor he lets down an empty basket by a cord into the lake, and, after waiting a short time, draws it up full of fish."

Lake dwellings of various countries in the present age.

But we have no occasion to seek for evidence in the ancient world of the existence of such structures as are here ascribed to the Pæonians. Dwellings over the water are constructed and inhabited by existing tribes of men. The fishermen on lake Prasias, in European Turkey, build their cottages over the water, and the town of Tcherkask is constructed above the current of the Don. In analogy with such structures we might cite the buildings of the people of India, which, though not over the water, are set on piles several feet above the earth. The same kind of abodes are found in South America and in the East Indian islands. The city of Borneo is so founded and built. The Dyaks have their houses on an elevated platform twenty or thirty feet high, in a long row above the edge of the river, and the floors are so constructed that all refuse and waste materials fall through into the water.

Switzerland favorably situated for such settlements.

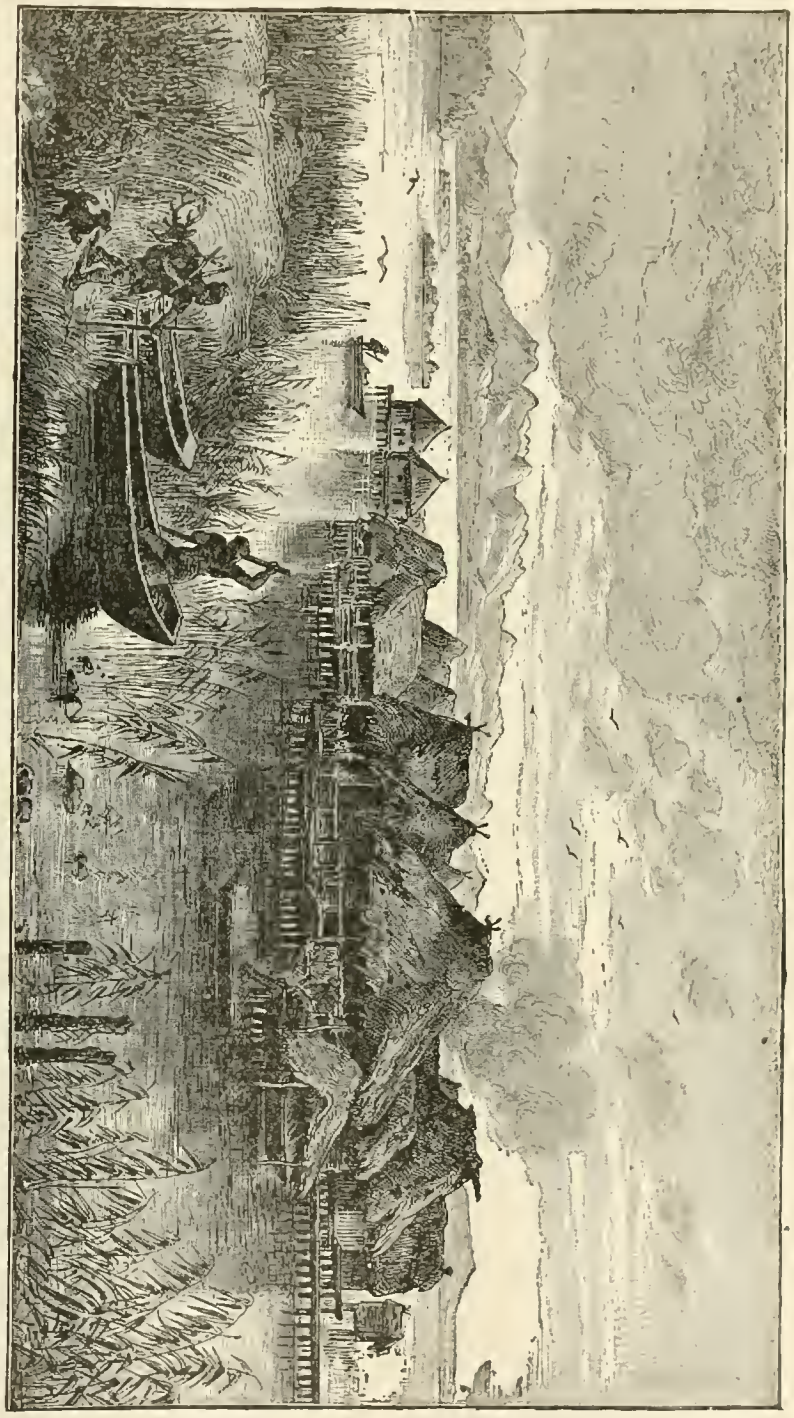
Switzerland is a locality specially fitted in its geographical structure for the duplication of the dwellings described above by the Father of History. The lakes in this mountainous region have fluctuated in the manner already described, and it was on the borders of the lake of Zurich that the first important discoveries were made. But at a later date explorations around the marshes of lakes Constance, Geneva, Neufchâtel, Bienne, Morat, Sempach, Inkwyl, Moosseedorf, and others have led to like results. A very ample demonstration has thus been obtained of the manner of life of the primitive lake people. The sites of *more than two hundred settlements* constructed as above over the water have been determined and described. No fewer than twenty prehistoric villages have been found on the shores of lake Bienne; twenty-four along the margin of lake Geneva; thirty-two on lake Constance; and forty-nine on lake Neufchâtel.

Discoveries on lake Zurich; the crannoges of Ireland.

It was between Ober-Meilen and Dollikon, on the banks of lake Zurich, that the inhabitants, taking advantage of the low water following the dry season of 1854, extended their gardens down to the margin along the new water line. They built a wall and then filled the space to landward by dredging up mud out of the bottom of the lake on the water side. While doing so they were surprised to draw up vast numbers of piles, or at least the lower ends of the same, which had in some prehistoric

MODERN LAKE VILLAGE, AT SOWEK.—Drawn by E. Mesples.

epoch been driven down through the water. Along with these sharpened points of trees came up a large variety of deer horn and stone implements of primitive workmanship. The fact that some aboriginal people had inhabited this shore was thus made clear, and scientific explorations, under the direction of Dr. Keller and other antiquaries, soon extended and verified the discoveries.



SWISS LAKE VILLAGE, RESTORED.—Drawn by Rion.

Before proceeding to describe the utensils and weapons revealed in the lake bottoms of Switzerland, it is proper to note the analogous results attained in Ireland. The manner of over-water building is here somewhat different from that practiced by the prehistoric mountaineers. Among the primitive people inhabiting the Irish lake country the plan was to construct a platform on the water, and on this platform to create a sort of artificial island upon which houses and defenses were erected. The name given to this floating residence was *Crannoge*, and the remnants of such structures are easily discoverable to the present time

The crannoges were the strongholds of the primitive Irish chiefs, to which they betook themselves in war, as the Highlanders of a later day to their castles. These prehistoric seats are very rich in implements and weapons and other works of the clans by which they were inhabited. But it is in evidence from the discoveries made in the crannoges that they are of a much later date than the cave dwellings of the Continent or even the lake dwellings of Switzerland. There are instances in which the contents of the Irish crannoge, as for instance that of Dunshaughlin, have been digged up by the wagon load and distributed on the shore to enrich the soil.

Likeness to Highland refugees; the crannoge findings.

In the support of the platform above the water on which the habitations of the Swiss lake people were built, two methods were employed. The first was to cut down trees, lop the branches from the trunks, sharpen one end of the same, and drive them, with many others of like sort, into the water after the manner of a modern pile work. On the upper end of these, above the surface of the lake, the platform was laid and extended according to the demands of the village. The other method was to heap up from the bottom of the lake a sort of rude stone walls, running here and there, rising to the surface, and furnishing support for the platform. But this method was only employed in the more sequestered waters, for the exposure to storms rendered this variety of building precarious.

Methods of supporting the Swiss village platforms.

There is little doubt that the bottom motive in selecting such a site and in building a village or even a single house above the water and at a distance from the bank was the prospect of gaining a vantage against ravenous beasts. In the primeval world this was always a serious question. For long ages the beast had the advantage of the man in the struggle for existence. Heroes whose fame is coëxtensive with the traditions of mankind became such by their successful warfare with wild beasts. Such was Nimrod and such was Hercules. After the hero, the next best thing was an artifice. Building over the water was an artifice. A single flattened trunk reaching from the platform to the shore, or at most a narrow causeway, was easily defended, and bears and wolves would hardly swim to the attack of men.

Fear of wild beasts determined the choice of such sites.

It appears that the lake villages were numerous and extensive. An estimate has been made by the antiquary, Troyon, as to the extent and populations of these settlements. The largest village on lake Geneva appears to have been twelve hundred feet in length and a hundred and fifty feet in breadth. Giving to each hut a diameter of fifteen feet and allowing one half the space to be covered, the village would contain three hundred and eleven houses, and with an estimate of four persons to the cabin, we should have a population in this settlement of twelve hundred and forty-four. The same calculations give for the village on lake Neufchâtel a population of nearly five thousand. Carrying out the same estimates, M. Troyon thinks that the lake population in this region was more than thirty thousand at the time when the villages flourished in the age of stone.

Number and extent of the Swiss lake villages.

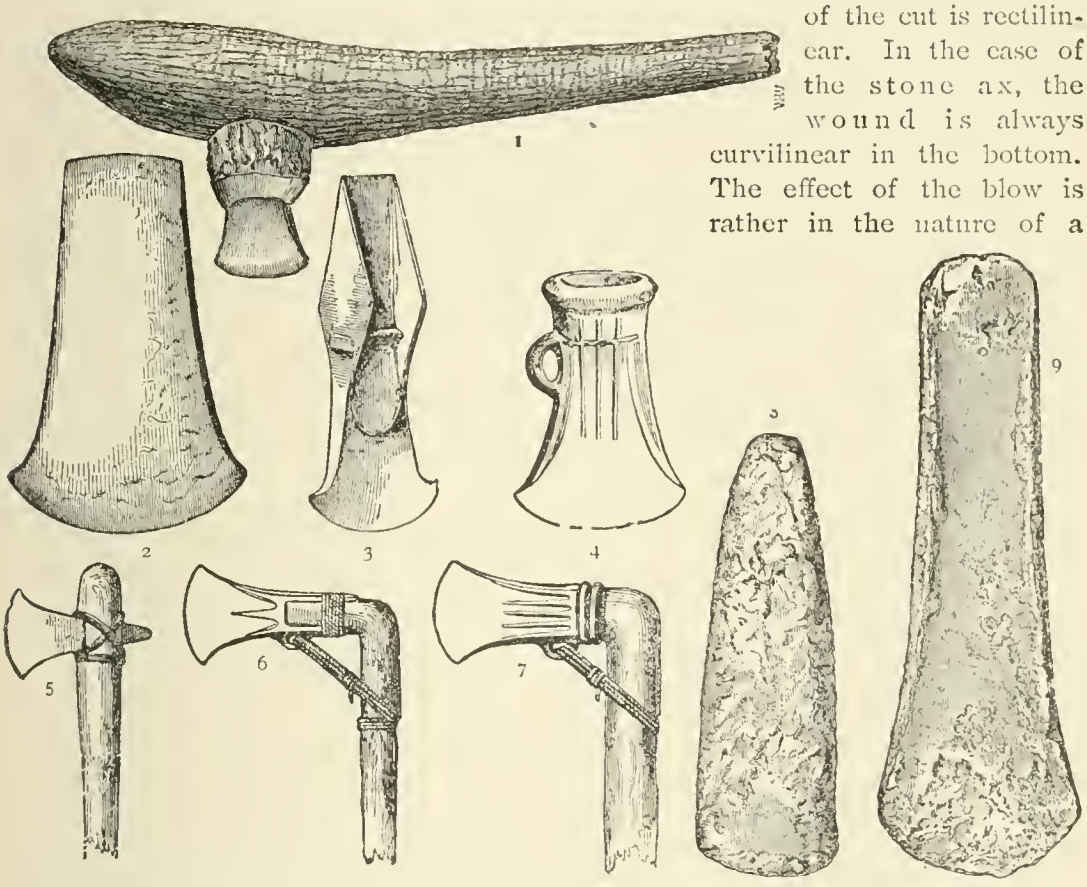
By the backward look we may still, in the mind's eye, observe the process of constructing these lake habitations. The first thing would be, of course, the selection of a suitable site on the water's edge. The shore must be accessible

from the lake and the lake from the shore. A forest must stand near by, from which the trees are felled, with almost infinite labor, by the strokes of stone axes and the assistance of fire. It appears that these primeval men would attack the tree at the base and cut it around as much as possible, and then burn the wounded part down to the solid body. Scraping away the charred portions, they would then cut again, until finally the tree came down. Similar methods were employed in sharpening the trunk. Here also the axes were employed and fire by turns until a rude point was obtained suitable for driving in the mud.

Materials employed in such structures by the builders.

It should be remarked in this connection that the stroke of a stone ax in wood is easily distinguishable from that of the metallic blade. The modern steel ax struck against the side of a tree, even at an angle, makes a straight wound. That is, the bottom of the cut is rectilinear. In the case of the stone ax, the wound is always curvilinear in the bottom. The effect of the blow is rather in the nature of a bruise, the wood where the ax falls being scooped out in a furrow, deeper in the bottom than at the edges of the cut.[1] In nearly all cases the piles supporting the platforms of the Swiss

Distinction in the work done by stone and metallic axes.



AXES OF PREHISTORIC MAN, SHOWING STAGES OF IMPROVEMENT FROM STONE TO BRONZE.
1, Swiss stone ax with handle; 2, copper celt, from Waterford; 3, winged celt, from Ireland; 4, socketed celt, from Ireland; 5, 6, 7, celts with handles of different patterns; 8, bronze ax, from Naples; 9, bronze ax, from Le Puy.

[1] It is claimed that no measure of sharpness which may be imparted to a stone blade will secure a rectilinear cut—like that so easily produced with metallic axes—in the wood struck with such blade at an angle; but the reason for such difference is not clear.

lake dwellings bear the marks of stone and not metallic axes, and in nearly all cases the process of sharpening the trunks has been assisted by the application of fire.

Question of setting the piles; form of the houses.

How it was that the primitive tribes adopting this kind of structure succeeded in raising their piles on end and driving them into the lake has not been ascertained. But the unmistakable evidence furnished by the stumps of the piles themselves shows that they were raised in some way and driven down. The work appears not to have been truly done, as many of the piles stand in the mud at an angle and others appear to have been bent somewhat from their original position by the weight of the superstructure. As to the platform, it was made of split timbers, rudely framed together on the top of the piles, and no doubt tolerably firm for the reception of houses. The latter appear to have been circular in form, made somewhat after the manner of Celtic huts.[1] They were chinked between the cracks with small branches of trees and moss, and were pointed within with mud. As compared with the cave dwellings described in the preceding chapter, it can not be doubted that the lake houses were a great advance, superior in comfort and safety, and not wanting in a certain picturesqueness of situation and aspect.

General character of the finds in connection with lake villages.

We come now to consider the evidences of ancient life which have been discovered in the lake bottoms and peat beds over which the villages were erected. In general, these settlements belong to the old stone age. This is clearly shown by the preponderance of rough stone implements which are found under them. It appears, however, that the lake dwellers continued to hold to their position until progress was made into the new stone age, and even into the age of bronze. In several places it has been demonstrated by the plentiful discovery of utensils and weapons of bronze that the lake villagers had advanced to the manufacture and use of this metal. In any event, all of these stages of development were anterior to the epoch of the Romans, and therefore to the daydawn of history.

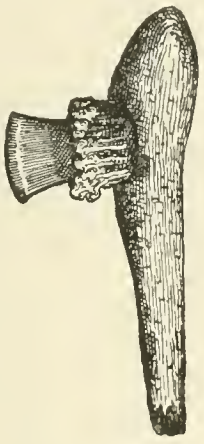
Variety of the implements; the materials employed.

If we glance at the old stone implements found in the margin of the Swiss lakes and in the peat bogs where the over-water villages were built, we find them to be of the same general pattern as those already described in connection with the cave dwellings. It has been noted that the Swiss prehistoric implements, as a general rule, are smaller than those used by the cave men. This is true of the arrowheads, the spearpoints, and the axes. The material employed in the manufacture of these tools and weapons was, for the most part, flint, but in some cases rock crystal. It has been noted that spindle-whirls of earthenware coëxist in the same layer with the rough stone implements. Other evidences of spinning and weaving have been discovered in the same situation, and to this should be added the presence of stone mortars and balls for crushing corn. Sir John Lubbock has recapitulated the articles found under a lake village in the peat measure of Wauwyl as follows: Stone axes, forty-three; flint arrowheads, thirty-six; flakes, two hundred; corn crushers, sixteen; hammers, twenty; whetstones, twenty-six; sling-stones, eighty-five; making a total of four hundred and twenty-six articles of stone recovered from a single bed.

[1] See the colored Plate at the beginning of the present book.

In examining these relics we are again impressed with the fact that rude commercial relations, at least the beginnings of traffic, existed in the age of which we speak. Many of the implements found around the Swiss lakes were brought, at least as to their material, from distant localities. Many of the flint implements are known to have been taken from the quarries of *France!* Some are found that were imported from the shores of the Mediterranean. It is impossible to tell, however, whether these weapons and utensils were carried by trade or by the migration of tribes to the mountain lakes of Switzerland.

Signs in the findings of interchange and commerce.

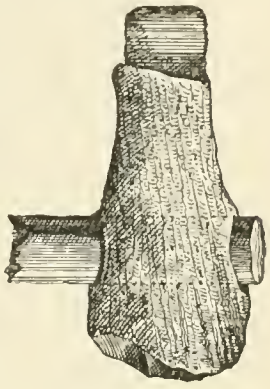


STONE HATCHET WITH SOCKET AND HANDLE.

By examination of the animal remains found under the lake dwellings, the inquirer discovers again the relations which the primitive people here held to the lower orders of life. As a rule, the prehistoric men ate nearly all kinds of animals with which they were associated. The skins of beasts were the principal articles of clothing, and the flesh was invariably stripped away for food. We note in the case of the lake dwellers the same appetite for marrow which we have already noted in the men of the caverns. They picked out of the hollow bones every particle of the contents, and evidently regarded the marrow as the principal delicacy. The harder and better bones were made into implements, but the horns of the deer were the principal resource in this line. From these were made the handles of a great number of other implements, and also picks and awls and scrapers.

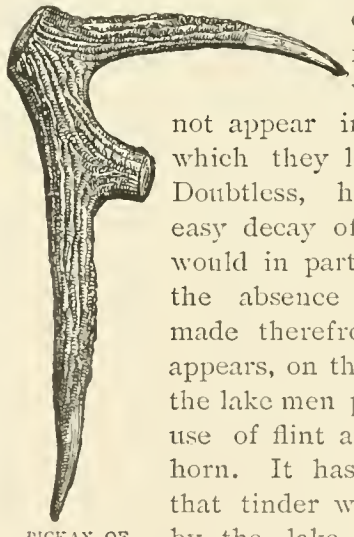
CHIPPED FLINT ARROWHEAD.

In some cases the attempt was made to produce a cutting edge from bone. But from the nature of the substance this could not succeed. Chisels were also attempted, but the material lacked strength and solidity, and the tool so formed could only be applied to the softer substances. The bone scraper was much used in the dressing of hides, in which it appears that all of the primitive Europeans had considerable skill. If the lake dwellers attempted the manufacture of wood, it does not appear in the relics which they left behind. Doubtless, however, the easy decay of wood fiber would in part account for the absence of utensils made therefrom. But it appears, on the whole, that the lake men preferred the use of flint and bone and horn. It has been noted that tinder was employed by the lake villagers in the production of fire.



FLINT HATCHET FITTED WITH STAG'S HORN HANDLE.

Use of bone in the fabrication of tools and weapons.



PICKAX OF STAG'S HORN.

The appearance of broken fragments of pottery in the lake margins and peat beds shows conclusively that the people of the age which we are here consid-

ering understood at least the rudiments of that kind of manufacture. Very few vessels have been discovered whole, but many in pieces. These all indicate the rudest kind of work. The vessels were evidently misshapen and unsymmetrical in design. It is thought that the potter's wheel was unknown. Nor has any evidence of furnace heat been discovered in the imperfect burning to which the fragments seem to have been subjected. Perhaps an open fire produced the highest heat with which these people were acquainted. The forms of a few vases have been determined which, viewed from an artistic point, are clumsy in the last degree. It is noticeable that the earthenware of these villagers is without feet or other support than the unfinished bottom of the vessel. It appears that the utensils were set upon the floor or on the soft earth where there was little danger of breakage.

Pottery of the lake dwellers; rudeness of the relics.

EXTINCT MANUFACTORY OF POTTERY, IN THE GLACIER GARDEN, AT LUCERNE.

Of human remains, strictly so called, only a few have been discovered under the lake villages. Nor might it be reasonably expected that many would be found. It will be seen at a glance that the situation has been much less favorable for the preservation of human skeletons, in whole or in part, than the mud beds under the stalagmite in the cave dwellings. The free action of water, the access of fishes to any bodies that may have dropped into the lake, the movement which would take place under the wave, and the change of temperature, very great as it is in the situation, would account for the destruction and decay of any bodies that might have gone to the bottom through the village platforms. It is likely, moreover, that the lake dwellers had regular methods of sepulture. As has already been seen, they were considerably more advanced in the human evolution than the cave men, and care for the bodies of the dead is one of the symptoms which marks the progressive people from the barbarians.

Scarcity of human remains in the lake margins.

Some remains of men, however, have been found in the mud of the lake margin in such relation with prehistoric relics as to identify them with the age of stone. Perhaps a half dozen skeletons, including the skulls, have been recovered, and from these a fair idea of the stature, form, and characteristics of the lake people have been determined. On the whole, they were not as tall as the Europeans of to-day, but the skeleton does not indicate that strong animal affiliation which we have noted in the men of the cavern. The proportions

Bodily forms of lake dwellers determined from skeletons.

of the lake dwellers were fairly good, and the skull shows a medium capacity. Nor is the configuration specially different from that of the mountaineers of the present time. As to the personal aspect of these people there is nothing better than conjecture to guide us. We know by their manner of life that their intellectual horizon was exceedingly limited; that they had the carnivorous habit, though not in that intense degree peculiar to the cave dwellers; that the social instinct was in some measure developed, as is shown in their aggregation in village communities, and that the beginnings of agriculture among them were sufficient to show the upward tendency toward a higher level of existence.

Animals with which lake villagers were associated.

As in the case of the cave men, much light may be thrown on the life and manners of the people of the lake villages by noting the animals with which they were associated and some productions of the soil which are known to have been economized. A large list of the beasts and birds and fishes peculiar to the era which we are here discussing has been determined by naturalists, and much valuable information therefrom deduced. The prevalent wild animals were the brown bear, the badger, the marten, the wolf, the fox, the wildcat, the beaver, the elk, the urus, the aurochs, the European bison, the stag, the deer, the wild boar, the marsh boar, the polecat. The domestic animals were the horse, the ox, the goat, the sheep, the dog, and the common swine. In the case of the horse, his domestication was but partial, and the demonstration of the existence of tame swine is not complete. It will be noticed at a glance that the wild animals here enumerated are of a somewhat later epoch than those associated with the cave dwellers. The mammoth, the cave bear, the cave hyena seem to have disappeared. Perhaps the Irish elk and the reindeer at no time held this region as a habitat.

Manner of lake life may be drawn from manifest data.

Much may be inferred by a little clear thought relative to the condition of the villagers from the consideration of their domestic animals. Such creatures must be cared for, especially in winter. They must be fed, not to say housed against the rigors of the season. Provisions and shelter would, therefore, be necessary, and people who make such provision and provide such shelter could not be wholly barbarous. Closely allied with this consideration is another drawn from the discovery of various grains that were used by the villagers. Many specimens of charred cereals have been found with other relics of this ancient life. Grains of wheat have been recovered from the finds at Meilan, Moosseedorf, and Wangen. At the last named place the antiquary had the good fortune to discover several bushels of wheat pressed together in a lump, the grains adhering in a mass. The appearance of the wheat is almost identical with that of modern varieties of the same grain. Many specimens of what is known as six-rowed barley have been recovered from like situations, and it will interest the reader to be informed that this variety of cereal was still under cultivation in the primitive days of Greece and Rome. Altogether, three kinds of wheat have been found under the lake dwellings, two varieties of barley, and two of millet. It appears that rye and oats were as yet unknown.

Reverting to the animals of the lake regions in prehistoric times we note two species of wild cattle, namely, the urus and the bison. The former seems to have been reduced to partial domestica-

tion as early as the neolithic period, but no indication of such a fact has been found in the old stone age. The largest of the animals prevalent around the Swiss lakes were these two varieties of wild oxen, the elk and the stag. The rhinoceros had disappeared and the urus had been much reduced from the served in the forests of Germany. It is noticeable that the list of domestic animals has been extended and confirmed. The horse has certainly become, in some measure, the servant of man, and sheep have been more positively reclaimed from the wild condition. It is thus evident that the mere barbarous life of hunters and flesh-eaters was giving way

Deductions from the animal life of the lake-dwelling age.

SWISS LAKE VILLAGE OF THE AGE OF BRONZE.– Drawn by Riou.

great proportions which he bore in the times of the cave men. Looking back from our own point of view we note that elks have not existed in Switzerland during the historical period, though they still maintained an existence in the lowland forests as late as the Roman period. The ibex has also disappeared. The smaller of the wild animals enumerated above still prevail in their ancient habitat, and even the wild boar has been pre- to a higher and more rational mode of existence among these villagers of the Swiss lakes.

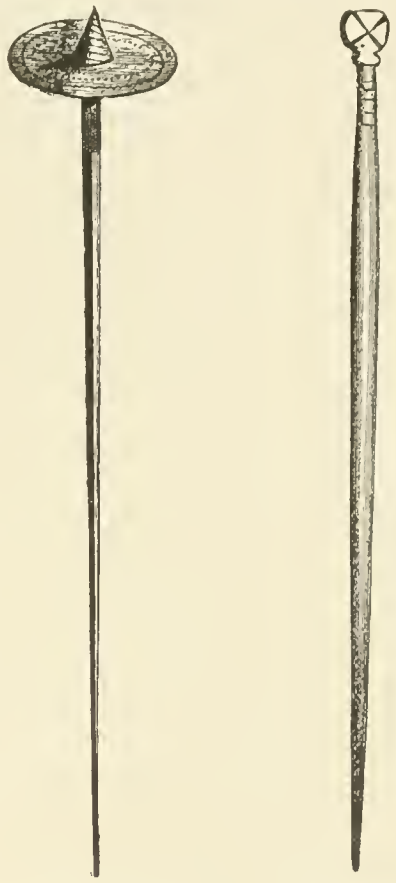
It will be of interest to add a few words relative to the birds which came by water or by air to the habitations of the lake men. The golden eagle circled above them. The bones of at least four varieties of hawk have been discovered. Two kinds of owl were known, and two

Species of birds belonging to the same epoch.

varieties of crow. The common starling was present, and the wood pigeon. There were two kinds of heath cock, also the white stork, the ashy heron, the dun grouse, the black coot, two varieties of meu, one kind of swan, one species of goose, two kinds of duck, one kind of diver. Of fishes and reptiles, the remains of as many as ten species have been recovered and identified.

Mention has been made of the finding of the cereals under the lake dwellings. It appears from the discoveries that the grains were roasted for food. Beyond this primitive method of preparing kernels, it is known that the lake dwellers used bread. Cakes, hard, flat, circular, unleavened, have been found just as they were prepared for the board at a date more remote than the founding of Rome! Of the methods of cultivation employed in this far time nothing is known. No agricultural implements or apparatus have been recovered, but tools for the preparation of grain, such as mortars and stones for grinding the kernels, are plentiful. Specimens of dried fruit, such as carbonized apples cut into halves or quarters, have been found at both Wangen and on lake Neufchâtel. Such fruits appear to have been of wild varieties, resembling the crab apple of modern times. The vine had not yet made its appearance. The walnut, the cherry, and the damson plum were unknown, but seeds of the wild plum have been discovered. Shells of the hazelnut and beechnut are frequently found in the mud, and sometimes the seeds of the raspberry and blackberry. Beans have been discovered, but only in the later relics of the age of bronze, while peas are found farther back, among the remains of the new stone age. From a consideration of all these elements we are able to make out a tolerably fair schedule of the daily subsistence, the means of supply, and the method of preparation peculiar to the prehistoric villagers of the Swiss lakes.

Significant traces of the prehistoric agricultural life.



Bronze hairpin found in Swiss lake. Bronze pin from a Scotch shell mound.

SPECIMENS OF FINE WORKMANSHIP IN BRONZE.

Mention has already been made of the fact that the lake dwellers continued to hold their situation until their implements of stone were succeeded by the manufacture and use of bronze. The villages belonging to the age of bronze are not so widely distributed as those of the stone period. The former were built, for the most part, on the lakes of Geneva, Neufchâtel, Bienne, and Sempach. In Eastern Switzerland very few

Lake dwellings extend into the age of bronze.

evidences of the age of bronze have been discovered. It appears that for some reason a kind of primitive conservatism prevailed on lake Constance which led to the continuance of stone manufacture long after the introduction of bronze in the western settlements. It is in evidence that other improvements besides the introduction of metal in workmanship appeared in the bronze-making villages. The platforms were more substantially constructed and the houses larger and of a more permanent character. It seems, moreover, that the villages of the age of bronze were built farther from the shore than those of the age of stone. At least the bronze relics are nearly always taken out from a greater depth of water and farther out than the stone implements peculiar to the older age.

By examining the bronze implements their superiority in design and workmanship to those of the periods preceding are quickly noted. The swords, daggers, axes, spearheads, knives, sickles, fishhooks, and articles of personal adornment are all of a pattern which may be called well formed, if not artistic. Bracelets, brooches, and finger rings are found which, though they may hardly be described as beautiful, are not devoid of tastefulness in design and elegance in execution. It is noticeable, moreover, that the supply of implements, weapons, and personal decorations is far more abundant in the case of the bronze-bearing villages than under those of the stone epoch. Many museums have been replenished from the resources here referred to, and a single collection cited by Sir John Lubbock contains four thousand three hundred and forty-six specimens; and it is an evidence of what may be called the personal pride of the villagers of the bronze age that of the list of articles here enumerated more than two thousand are hairpins and rings. In the age of bronze the human race entered upon its career of strength and variety, but did not yet enter upon the career of ambition and vain delusion which it was to pursue in the age of iron.

Evidences of the emergence of the race from barbarism.

CHAPTER XVIII.—COAST PEOPLE OF THE NORTH.

E now turn to another aspect of primitive life quite different from those discussed in the preceding chapters. We have reconstructed as far as practicable the conditions of the old Aryan housefolk of India; of the cave dwellers of Western Europe, and of the lake dwellers who took advantage of the water surface as a means of protection and convenience. We now come to consider a mode of prehistoric existence which was developed along the seacoast, especially in the northern and northwestern parts of Europe.

Of the forms of primeval life already presented, the most barbarous was that of the cave men; the most elevated, the house people of the East; and the most progressive, the lake dwellers of Switzerland and other like localities. In entering upon a review of the people of the seashore, we shall again be carried back to an exceedingly rude and aboriginal type of human existence, perhaps not

Relative savagery of several prehistoric conditions.

quite so gross, but equally primitive with that of the cave dwellers.

Discovery of the shell dunes on the coast of Denmark.

About the time that the really scientific investigation of archæological remains began in the second quarter of this century, it was noticed that on the coast of Denmark and in other similar situations long, low dunes were thrown up. Sometimes the elevations were were too far from the surge to have been thrown up by the action of the water first drew the attention of archæologists and naturalists to their peculiarities. It was found that those of the mounds which lay within reach of the tide were made up in part of sand, but the larger portion of the material was shells. In the case of those dunes that

Mound contents; investigations of Streenstrup.

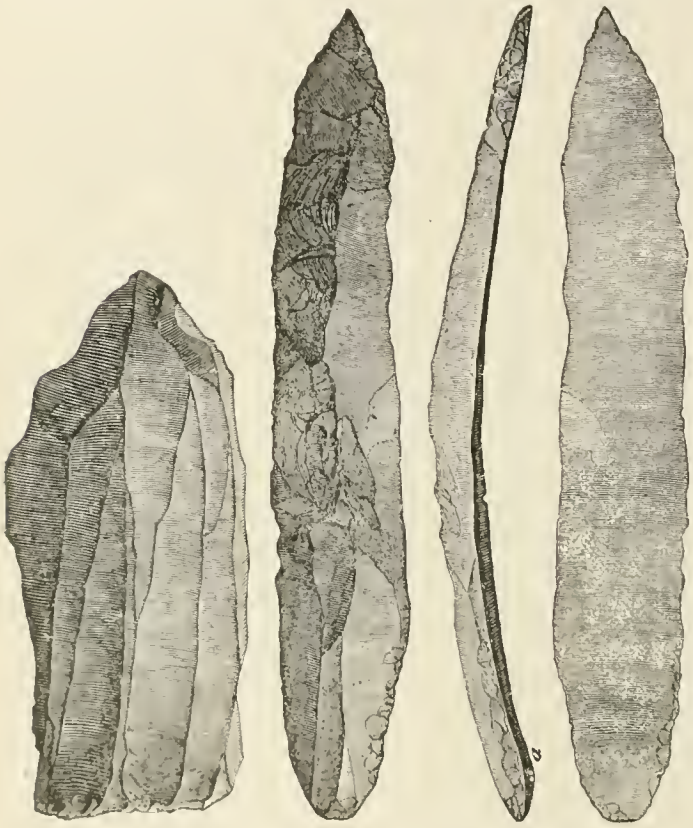
KITCHEN MIDDENERS AND THEIR DWELLINGS.

nearly circular, sometimes they were ring-shaped, having a crater-like depression in the center. But more frequently they were elongated elevations, from one hundred to three hundred yards in length, perhaps two hundred feet in breadth, and from two to ten feet in height. The situation was along the surf line of the sea, but generally outside of the reach of the tide.

The fact that these dunes and mounds were in the higher situations, beyond the reach of the water, they were composed almost entirely of shells, and a very casual examination showed that the mollusks inhabiting them had belonged to another age. Such was the beginning of the discoveries.

The Danish naturalists led the way in examining these strange formations; and it was at once observed that the shells were intermixed with the débris

of human life. Here, then, was a new class of relics of prehistoric existence, and a new field of inquiry opened before the antiquary. Professor Steenstrup was again in the van in the exploration of the shell mounds. He gave them, in the first place, the name which they have ever since borne, of Kitchen middens. In his own language the word is *Kjökkenmöddings*, which signifies "kitchen refuse heaps." The idea of the learned Dane was that these mounds were the refuse of the food and waste material of a people who had built their huts on the seashore, and had manifestly subsisted for the most part on shellfish. This primary hypothesis of the naturalist was borne out by all subsequent investigations, and it was soon established beyond doubt that a prehistoric people had chosen the shore of this northern sea as the best vantage ground which they could procure in their struggle to preserve life and perpetuate their tribes.



Flint core or nucleus. Flint flakes, Denmark.

WORKMANSHIP OF THE KITCHEN MIDDENERS.

The shell mounds are by no means isolated phenomena. They are rarely found singly, but in groups, covering a considerable extent of coast. This is to say that the primitive people dwelling here lived in aggregations, or villages of huts on the beach. Sometimes a principal mound will appear, and around this others of smaller proportions. The contents are abundant, and the vast heap of shells is in many cases carted away by the inhabitants and used to replenish the soil.

The kitchen middens indicate village communities.

What strikes the beholder in opening one of these mounds is the fact that the *whole contents*, or the materials of the elevation, are the débris of human life. Hardly any merely natural substance is found intermixed with the shells and other refuse of the kitchen and the hut. Doubtless the kitchen was the hut and the hut was the kitchen. In a few instances some gravel and other unmodified natural products are found in thin layers or scattered among the waste of the hovel. But for the most part everything has had its use in the hands and mouths of the primitive tribes inhabiting this coast. The people appear to have subsisted almost exclusively upon oysters and mussels, and to have flung the shells out of the hut until they ac-

The heaps made up of the débris of human life.

cumulated to a depth of several feet. It would seem that in many instances the hut itself would be half buried by the accumulation around, and doubtless the site of the dwelling is the crater which is noticed in a dune here and there.

Character of the kitchen midden tools and utensils.

If we examine the implements and weapons which the coast people lost or broke or cast aside with the other débris of their villages, we shall find them to be of the most primitive pattern and rudest workmanship. They are nearly or quite all of the old stone age, and the method of fracture employed in making them seems to have been less skillful than that of the oldest lake villagers, and fully as rude as the workmanship of the cave men. Great quantities of flint flakes, rough axes, lanceheads, arrow-points, weights for fishing nets, sling-stones, and awls have been recovered from the mounds, and they are, without exception, of the primitive pattern and finish above described. From the shell mound of Meilgaard, which was visited and examined by Sir John Lubbock in person, nineteen axes, a hundred and thirty-nine flint flakes, six bone pins, six horns, four pieces of rude pottery, one stone hammer, and twenty sling-stones were recovered. This mound is merely specimental of scores of others that existed and still exist along the coast of Denmark. These, like the lake villages and the cave dwellings, have contributed thousands of specimens to the European museums, and these have been arranged and classified with respect to their antiquity, so that he that runs may read the story of a prehistoric age.

The extreme simplicity, not to say barbarity, of the method of life of the shell-mound people has already been indicated. As compared with the lake villagers of Switzerland, even of the old stone age, they were far behind. The lake men were acquainted with wheat and barley, and even with the manufacture of bread. But in the shell mounds no traces of grain have been discovered, nor have any relics of vegetables such as men would use for food been found in the débris around the huts. The people seem to have subsisted altogether upon the shellfish which they gathered along the shore, either by digging in the sand with the recession of the tide, or by rude nets which they dragged in shoal water. These mollusks, together with certain birds and wild animals which they were able to capture, constituted the only food of the hut dwellers.

Deduction of a low grade of barbaric life.

The four principal varieties of sea mollusks which the mound builders ate, and which indeed constituted their chief supply, were the oyster, the cockle, the mussel, and the periwinkle. All of these, as is indicated by the shells, were of larger size than those now found on the same coasts. The oyster has wholly disappeared from these waters, and doubtless the other species were of different varieties from those now existing. It must not be understood, however, that the bones of birds and mammals are wanting in the mounds. On the contrary, these are rather plentiful. Professor Steenstrup has estimated that each cubic foot of the shell material contains on the average ten or twelve bones. The mound at Havelse has yielded about three thousand five hundred specimens of the bones of mammals, and more than two hundred of birds. Fish bones other than those of the sea mollusks are also found intermixed in the mounds. The remains of the herring, the dorse, the dab, and the eel have

Nature of the animal remains found in the heaps.

been plentifully recovered in several localities.

Of the relics of mammalia, the most common are of the stag, the roedeer, and the wild boar. In addition to these, bones of the urus, the bear, the dog, the fox, the wolf, the marten, the otter, the porpoise, the seal, the water rat, the beaver, the lynx, the wild cat, the hedgehog, and the mouse have been found in the shell mounds, but sparsely distributed. It will be at once observed from these facts that the animals which the coast people were able to take and kill were generally of the smaller species. The extreme scarcity of the bones of the heavier and fiercer beasts might well beget a doubt as to whether the prehistoric man of this coast dared to meet them in combat at all. Another striking feature revealed by the exploration of the shell mound is that all of the animals here enumerated were wild. It appears very doubtful whether even the dog had become the friend of the dwellers in these seashore huts. At any rate, his bones have the same aspect as those of the creatures of the woods.

Wild beasts known to the kitchen middeners.

DANISH SHELL-MOUND AXES.

The fact of the complete destruction or consumption of the animals with which the shore people came in contact is illustrated by the absence of entire skeletons and the miscellaneous distribution of the bones. It is generally the long bones that are found scattered among the shells. The heads of these have been broken off and reduced to edible conditions, or else have decayed in the course of ages. In all cases the bone shaft has been opened for the marrow; from which it appears that the coast people had the same appetite for this delicacy as did the cave dwellers. From the absence of skeletons, or even large parts thereof, it has been more difficult for naturalists to reconstruct the animals of the Danish coast than of any other situations; but enough has been gathered to justify the foregoing statement relative to the wild creatures with which the shell-mound people were familiar.

Inferences as to the eating habits and customs of the race.

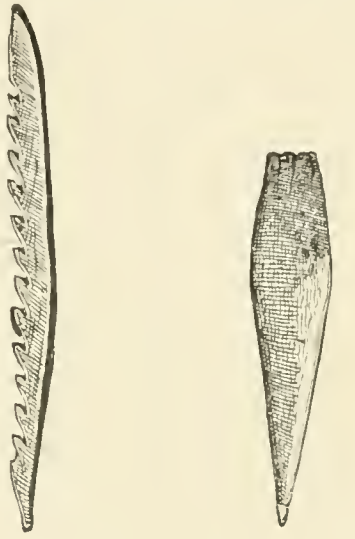
An interesting illustration of the skill of antiquaries in looking into the past is furnished in their method of determining the habits of the prehistoric tribes of Denmark. It is known, for instance, that they were not migratory, but that they held their abode in the same huts the year around. This fact was ascertained from an examination of the bones of the birds upon which these people in part subsisted. Some of these birds, as for instance the singing swan, visit this coast only in the winter. In the month of March they leave for the

Methods of determining the habits of the shell mounders.

South, and return late in November, but the distribution of wild swan bones is frequent in the shell mounds. It appears certain, therefore, that they were taken in winter. Therefore the coast people had their residence here in winter. Again, the horns of stags are cast at certain seasons of the year, and one or two other animal phenomena of like sort have a periodical significance. From the collation of these facts it is proved that the hut dwellers in the localities here described remained in their place throughout the year, and were not merely fishermen of the summer season.

Analogue of the Fuegians; description by Darwin.

We thus see on the Danish coast another type of primitive life quite distinct from those which we have hitherto considered. It is likely, withal, that their manner of existence was not very different from that of certain tribes still living in the extreme of South America. The Terra del Fuegians subsist in a manner very analogous to that ascribed above to the prehistoric tribes of Denmark. They have no domestic animals except the dog. They live almost exclusively on shellfish, and their huts along the coast, if continuing undisturbed for a sufficient period, would doubtless be surrounded by a collection of waste materials almost identical with those of the remote age of the shell-mound people of the North. The great naturalist, Charles Darwin, says of these tribes: "The inhabitants, living chiefly upon shellfish, are obliged constantly to change their place of residence; but they return at intervals to the same spots, as is evident from the pile of old shells, which must often amount to some tons in weight. These heaps can be distinguished at a long distance by the bright green color of certain plants which invariably grow on them. . . . The Fuegian wigwam resembles, in size and dimensions, a haycock. It merely consists of a few broken branches stuck in the ground, and very imperfectly thatched on one side with a few tufts of grass and rushes. . . . Viewing such men, one can hardly make oneself believe they are fellow-creatures and inhabitants of the same world. . . . At night five or six human beings, naked and scarcely protected from the wind and rain of this tempestuous climate, sleep on the wet ground coiled up like animals. Whenever it is low water they must rise to pick shellfish from the rocks; and the women, winter and summer, either dive to collect sea eggs or sit patiently in their canoes, and, with a baited hair line, jerk out small fish. If a seal is killed, or the floating carcass of a putrid whale discovered, it is a feast; such miserable food is assisted by a few tasteless berries and fungi."



Bone harpoon of the Stone Age of Denmark. Arrowhead of reindeer horn.

FINDS FROM THE KITCHEN MIDDENS.

All attempts to construct an authentic chronology for the age of the coast people whose rude life is here depicted are futile. The fact that such modes of

tribal evolution exist in different ages has already been dwelt upon. We have just seen that the Fuegian tribes in the extreme of South America are still in this aboriginal state of development; and we know that in the north of Denmark the shell-mound people had passed away before the beginnings of history. The evidence of this is complete and irrefragable. It is known, moreover, that not only were these tribes prehistoric, but that they held their rude career at a very remote period, even archæologically considered.

Not possible to fix chronology of the shell-mound tribes.

We are able in part to measure the distance of the epoch of the coast men by certain transformations which we know to have taken place in the vegetable kingdom. Since the earliest references in the works of the Roman naturalists the countries of Northern Europe have been heavily covered with a forest of beech. This has been the prevailing growth of these regions since about the time when iron began to be used for implements and weapons. It is well known in the botanical history of the world that the forest of beech is preceded in the plant-cycle of nature by a forest of oak, which in its turn has a long period of duration as the prevalent growth. That is, before the beginnings of the present beech forest of Northern Europe an oak forest prevailed in the same countries for indefinite ages. It is also known that in like manner the pine precedes the oak. That is, the order of nature is, first, so far as we are able to discover, a forest of pine, which at length falls into decrepitude and is succeeded by a forest of oak. This, in its turn, and after a long cycle, grows old, maintains for a while a precarious existence, then gives place to a forest of beech. At the present time the beech forest is growing old, and will at length give place to some other. But we know that the present prevailing woods in Denmark and other regions of the North have existed there since a time long before the age of Pliny—even before the founding of Rome.

Botanical indications of their remote antiquity.

Now an examination of the bones of the birds which were taken and eaten by the coast people and shell-mound era shows conclusively that some of the birds in question were of species which are known to feed upon the berries of the pine tree! So slight a fact is one of many sufficient indications that point unmistakably to the conclusion of the extreme antiquity of the age which we are here considering. It is by this kind of patient research that our knowledge of prehistoric peoples has been widened and developed into its present amplitude; and though it is by no means complete and satisfactory, it is nevertheless sufficient to enlighten the present races inhabiting the earth with respect to the manners and customs of those who slumber in its bosom.

Bird-life bears witness to the same conclusion.

Coïncident with the discoveries which have led to the reconstruction of primitive life in the manner hitherto described, have been others quite analogous. Not only did primeval tribes inhabit the shores of the sea and build thereon their rude huts, scattering around the waste and refuse of their daily life, but others like them in habit and character chose the river banks. It is well known that the currents of rivers vary somewhat in their place and direction. The bed of a running stream is by no means a constant feature in geography. Though in general it traverses a valley, it will be found in one age against the hills on one side, and in the

Over-water habitations established on river banks also.

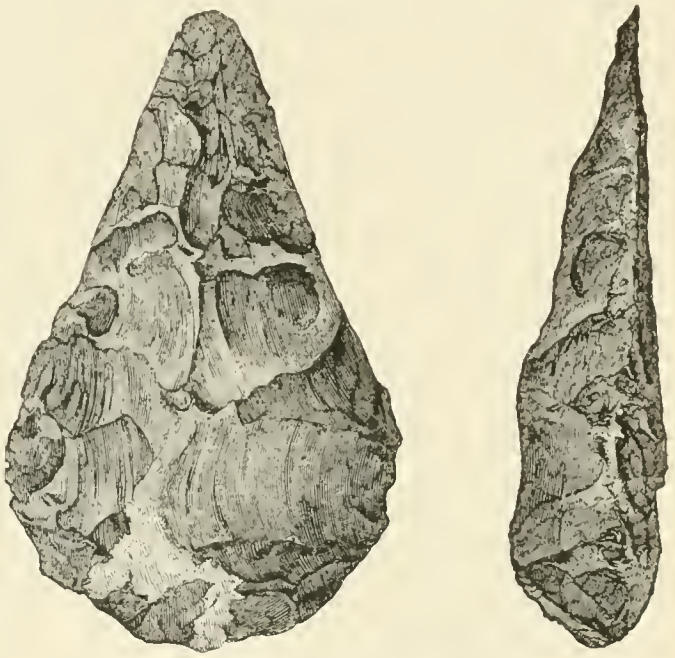
next age on the other. Moreover, the volume of water is much greater in some epochs than in others. As a general fact, the streams and rivers of the early ages of the world were much fuller and stronger than they are to-day. As a world grows older its streams grow weaker, until they finally disappear, and the epoch of life is at an end. The primeval age was one of humidity and plentiful rainfall and full volume in the rivers.

One of the principal concomitant circumstances of the river flow is the formation of sand and gravel. Ledges of rock are broken off and the fragments divided into smaller parts. These are rolled over and over by the stream until they are worn into pebbles and gravel and sand. Vast accumulations of these materials are deposited here and there in the river elbows and bends and curves, in the valley to the right hand and into the left, and especially about the débouchure of the stream near the mouth. While this process is going on the banks of the river on this side and on that are worn away and carried along with the current. Sometimes a whole valley, by a change in the course of the stream, is swept out and deposited somewhere below. These circumstances must be borne in mind if we would apprehend clearly the nature of the discoveries to which attention will now be called.

Physical conditions antecedent to formation of gravel beds.

As early as the beginning of this century implements and weapons were known to have been gathered from river-drift gravel beds, but the significance of such discoveries was unnoticed or ignored. There has been a strange disposition, even on the part of scholars, to maintain old traditionary views about the age of man on the earth. Every new fact tending to show the antiquity of the human race has been resisted and resented as a sort of intrigue against the integrity of existing beliefs.

In geological science this tendency has been especially noticeable. Geologists themselves have for a long time shut their eyes to the most palpable facts, patent to their own senses. It was from this supposable salutary conservatism that the first discoveries of prehistoric relics in the gravel beds, as well as in other situations, were ignored and denied. Those who were determined to maintain the old views respecting the chronology of the earth and its inhabitants put forward all sorts of ridiculous hypotheses to account for that which was unaccountable under their own theory. They even published



PALÆOLITHIC RIVER-DRIFT SPEARHEADS.

Dogmatism confronts geology respecting river-drift findings.

treatises in which it was boldly alleged that the old stone implements which had been found in prehistoric situations were *forgeries* which had been perpetrated against authentic science—that those who were trying to disturb the current beliefs of mankind had *invented* the alleged discoveries to produce a new hypothesis respecting the antiquity of the human race!

Careful examination of the fluvial deposits.

Gradually, however, light dawned and the truth was acknowledged. One naturalist after another became convinced that the weapons and utensils found in the gravel beds were in such relation with geological facts as to compel a belief in their remote antiquity. Many of the men most eminent for learning in Europe visited distant localities and conducted personal explorations in order to establish the truth or falsity of the new view of the antiquity of man. The result has been corroborative of that deduced from other fields of inquiry; and it is now as well known that prehistoric races dwelt in Europe in the time of the mammoth, and wrought rough implements of flint in the post-pliocene era of geology, as it is known that the Assyrians flourished on the Tigris and that Cæsar led Roman legions across the Rhine.

Such findings extend to the British Isles.

The evidences of the existence of primitive tribes along the river valleys of Western Europe have been discovered more abundantly in France than in any other country; but the river banks of England have also yielded their testimony. Before the beginning of the eighteenth century a British weapon had been found in a gravel bed in connection with an elephant's tooth, in a situation described as being "opposite to Black Mary's, near Graye's Inn Lane." This weapon is described as a large black flint, shaped into the figure of a spearpoint. It is known to have been engraved as early as 1715, and a print of it has been preserved in Leland's *Collectanea*. Since the science of antiquities has been developed in our own day, this ancient implement has been shown to be of the same pattern, workmanship, and quality with those found in like situations on the Continent.

River valleys of France especially rich in human relics.

Several of the rivers of France have been specially rich in their yield of prehistoric relics. The principal of these are the Somme, the Seine, and the Oise. In the valley of the first of these streams the explorations have been conducted with scientific skill, and the discoveries made have been fortified as to their verity with all the care and penetration which the best scholars of Europe have been able to bring to the question. It will be of interest in this connection, therefore, to look briefly at the geological character of the Somme valley, and the position in which human relics have been found therein, to the end that the reader may have before him a clear statement of the situation and proof of the results.

Character of the valley and deposits of the Somme.

The discoveries on the Somme have been made for the most part in the neighborhood of Amiens and Abbeville. At these places the valley, from hill to hill, is about a mile in breadth. The main geological formation of the country is chalk. Through this, in the glacial period, the valley of the river was plowed out, and in this wide, low trough the stream still makes its way to the sea. But in the course of ages many secondary formations have taken place in connection with the river. What is properly called the river bottom is filled up in

this neighborhood with a broad, deep bed of peat. This is in some places thirty feet in depth and more than a third of a mile in breadth. In this peat bed, which has been slowly forming for many centuries, at a great depth therein, stone implements and other relics of a prehistoric people have been found. The bones of extinct mammalia are here associated with the works of man in such relation as to establish their contemporaneity.

The peat formation in the Somme valley, however, is one of the newer accretions peculiar to the situation. If the observer take his stand on the low peat bog near the margin of the stream and look to the hills on either side he shall find, at two or three levels in the chalk formation which rises to the height of two or three hundred feet, beds of gravel cropping out of the banks. Through these beds, which were manifestly formed by the river in the older ages of the tertiary epoch, the stream has gradually worked its way down, by attrition, to lower and lower levels, leaving the gravel beds far above the present position of the stream. Above the outcroppings of these beds the old chalky walls which constitute the barriers of the valley are seen rising to the general level of the country above, which is a plateau spreading off in slight undulations. Even the novice in geology is able to perceive that the peat bogs in the bottom of the valley are of recent origin as compared with the old gravel beds lying far above the present level of the river. Yet it is in these gravel beds that the discoveries of some of the most ancient specimens of human workmanship in the world have been made: and the situation in which they have been found has been scanned with so much care, and the explorations conducted with such scientific accuracy, as to preclude all doubt relative to the verity and significance of the facts in question.

PALÆOLITHIC RIVER-DRIFT LANCEHEADS AND AX OF ARCHAÏC PATTERNS.

Time relations of the peat beds to the chalk formations.

Sir Charles Lyell estimates that more than a thousand implements have been taken from the gravel beds in the neighborhood of Amiens. They are all of a common type, and belong to the oldest

epoch known to archæology. They have been classified under three heads, the first of which includes the spearpoints; the second, a sort of almond-shaped implements which appear to have been used as axes for general purposes, such as breaking bones and cracking holes in the ice; and thirdly, flint flakes and arrowheads. All of these are produced by mere fracture, not a single specimen bearing the marks of grinding or polishing. The forms are rude, but the workmanship unmistakably human. In many instances the prehistoric artisan has taken advantage of the natural form of the flint, and merely modified it by breaking *one part* into a cutting form. It has been noted that between the spearheads and the almond-shaped axes several intermediate grades of implements exist, which would seem to show that the end in view was not clearly defined in the minds of the makers. Yet in the midst of the manifest barbarity of the epoch in which these implements were created there has been found a single evidence of taste in certain small globular bodies, with a tubular cavity in the center, which appear to have been used for ornamentation.

Character of the findings in the Amiens deposits.

Notwithstanding the abundant proof that the weapons and tools above described are the relics of human activity in a prehistoric age, very few human remains, properly so called, have been found in the river-drift gravel beds. Only an occasional underjaw, or some other of the harder parts of the frame of man have been recovered in these situations. The bones of animals are much more frequent, and are easily defined; but a moment's reflection will show that these facts would be indicated by right reason. As for the animal remains found in the gravel, they are evidently the fragments of mammals that were drowned by ordinary accident or in times of flood. In such emergencies man is more expert and cautious than the lower orders. Even in his lowest estate he has some measure of foresight, and escapes from a dangerous situation. The gravel pits were not the places of burial. They do not mark the exact sites of human dwellings. They represent materials that were carried to their present place by the action of water. In many cases these materials have been brought from considerable distances. Even an occasional human skeleton given to the river would be tossed and broken and worn, in its course onward, being ground against stones and pebbles into elementary fragments. Moreover, decay does its work. The hardest bone will not survive forever, even under conditions favorable to its preservation.

Reasons for scarcity of human remains in the river-drift.

The paucity of human remains in the gravel beds is in close analogy with the like fact in the shell mounds of Denmark. They, too, have yielded in but rarest instances any actual fragments of the human frame, and it is easy to see that more might be expected from the kitchen middens, with their abundant detritus of man's habitation and localized association with his life, than in the case of river-drift heaped up at long distances from the place where he had his abode.

Shell mounds also have but few of the remains of men.

Not only in the gravel pits of the valley of the Somme, not only in like situations along the banks of the Seine and the Oise, have these relics of the prehistoric life of man been discovered. Like revelations have been made in the river bottoms and sandpits of Great Britain. In a gravel bed at Hoxne, in Suffolk,

Extent of the findings in the gravel beds of England.

specimens of human workmanship like those above described were found as early as the beginning of this century. In similar formations between Guildford and Godalming, flint implements of the old stone age have been found and preserved. It must be borne in mind that the special significance of such discoveries lies in the fact of the association in the gravel beds of these human remains with the bones of the mammoth and other extinct species belonging to the post-tertiary period of geology. In various other localities like revelations have been made by explorations of gravel beds, such, for instance, as those at Ickingham, at Herne Bay, at Abbot's-Langley, and at Green Street Green, in Kent. In a layer of river-drift, near Bedford, bones of the mammoth, the rhinoceros, the hippopotamus, the primitive ox, the horse, and the deer have been found in prehistoric relations with flint implements belonging to the old stone age. In short, the discoveries made in the gravel beds of Great Britain have fully corroborated and verified those made in the valley of the Somme and on other parts of the Continent.

We thus see that along the river valleys of Europe, at a time before the incoming of the first Aryan tribes, primeval races had possession of the country in various parts, and had begun those rude activities out of which the civilized condition was ultimately to spring. The relics described in these last paragraphs are of the most primitive pattern and workmanship. They indicate, indeed, the very first emergence of men from the state of absolute nature and barbarity. The tool-making and tool-using instinct marks, perhaps, the very earliest stages of human development. Whatever may have been the origin of man in these western parts of Europe, we see him, in these far prehistoric times, either an absolute savage or a barbarian, but slightly elevated above the savage state. Perhaps if our knowledge were more complete we should be able to delineate many other circumstances relative to these hard beginnings of civilized life in Europe. The future may still contribute something to our further enlightenment relative to the habits and manners of prehistoric peoples, but for the present we must remain satisfied with an approximate view of their condition.

Deductions respecting the races of the river-drift epoch.

CHAPTER XIX.—MEN OF THE TUMULI.

BEFORE dismissing the subject of the prehistoric life of man on the continent of Europe, still another field of inquiry remains to be considered. In all parts of the European countries, from the Baltic to the Mediterranean and from the British Isles to the Ural mountains, another class of facts, bearing unmistakable evidence of the ancient activities of men, are plentifully distributed. These are the mounds which the tribes builded, in burial and for other purposes, generally called Tumuli: standing stone structures of several varieties, known as Menhirs, Cromlechs, and Dolmens; barrows, camps, fortifications, dykes, and perhaps altars of sacrifice, besides many other kinds of rude

Tumuli and other memorials of primeval man in Europe.

architecture and memorials. Such remains, hardly of sufficient dignity to be known as ruins, are found not only in Europe but everywhere in the world.

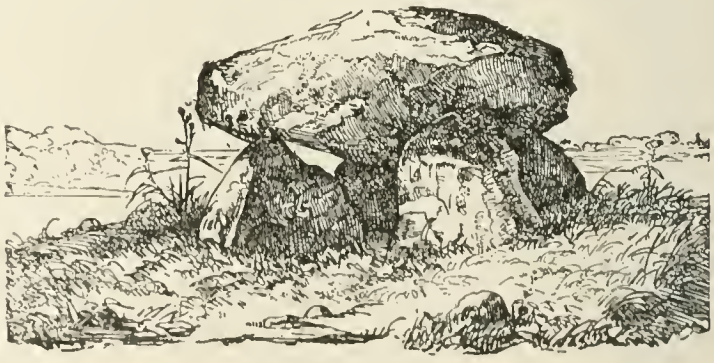
MENHIR, AT CROISIE, FRANCE.

Perhaps no country, great or small, is without such manifest evidences and illustrations of the long dead activities of races and tribes unknown to history. Everywere this substratum of human life, more aboriginal than the aborigines, existed. Traces of it are found on every hand. America, as well as the older lands, abounds in astonishing proofs of nations that existed here, even in strength, between whom and the Indian races that held the continent on its opening to civilization as wide a space of time and character exists as that between the rudest of the Red men and their Saxon conquerors. The mound builders have been abroad; and the long, serpentine mole of earth, or conical hill, of artificial construction, standing here and there in the civilized countries of to-day, bear mute, but everlasting testimony of the ancient and undiscoverable peoples who have gone down to dust.

Abundance of such remains throughout the world.

It is said by Sir John Lubbock that in the Orkney islands more than a thousand of these tumuli and stone heaps are found. In the Danish peninsula the number is still greater, and it would be safe to say that in America more than ten thousand such monuments of prehistoric times exist. The variety exhibited in these relics of a past age is almost as great as their number. Perhaps a majority of all were intended as monuments to the dead, but the details are different, and many volumes could not contain an elaborate description of all. We know from history that even from the daydawn of authentic story men were disposed to mark the resting place of the dead with a trophy. Pillars were set up as the tangible evidence of important transactions. In general, every crisis in life, as well as its termination, demanded a testimonial. It is said in the Assyrian annals that Semiramis buried her husband under a mound of earth. A stone heap was made over the tomb of the father of Œdipus. In the heroic age the building of mounds over the dead was the custom of the time. Patroclus, friend of the crested Achilles, was buried under a tumulus a hundred feet in height; and it has been reported in tradition that Alyattes, father of Cresus, had a stone-and-earthen tomb more than a mile in circumference.

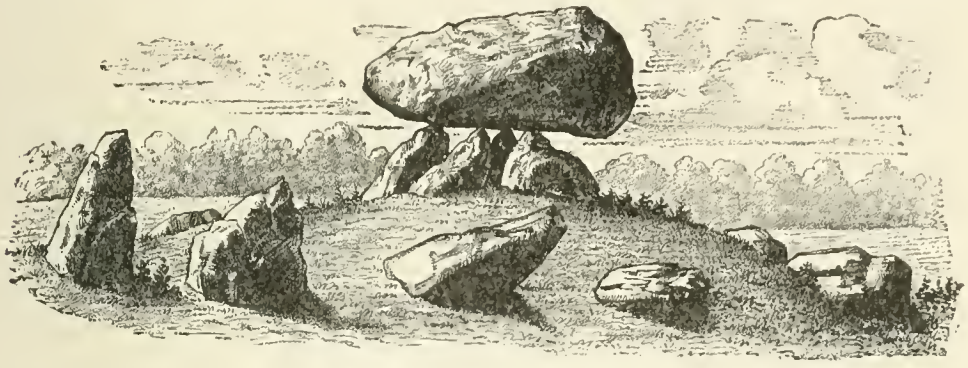
Meaning of the tumuli and stone monuments.



DANISH DOLMEN.

The mounds of which we are here to speak belong to a remoter and ruder age than that of the Trojan War or the conquest of Canaan by the Hebrews. And yet they are not of so great antiquity as those prehistoric memorials which we have examined in the preceding chapter. In general, the tumuli of Europe were built in the age of bronze, and therefore are posterior by a long epoch to the times of the cave dwellers and coast people. This is plainly evidenced in the utensils and weapons which are recovered from the mounds, and which are almost invariably of bronze material. The workmanship, moreover, is of that half-elegant design and execution which belong to an age subsequent, by many centuries, even to the neolithic, or new stone, epoch. It now remains for us to examine, at least casually, some of the existing monuments belonging to the age of the mound builders in Western Europe.

The mounds generally belong to the age of bronze



CROMLECH OF HALSKOV, DENMARK.

One of the most striking of these memorials is the great megalithic ruin known by the name of Stonehenge, situated in Salisbury Plain, Wiltshire, England. It is the most striking relic of its kind in the world, and has been many times described by travelers and antiquaries. It consists of two great circles of upright stones, one exterior to the other. The outer circle is about three hundred feet in circumference, and the stones in this row are as much as sixteen feet in height and six feet in diameter. On the tops of the rude pillars are laid other stones, horizontally.

Ruin of Stonehenge; its aspect and traditions.

DANISH TUMULUS.

The inner circle is nine feet distant from the outer. The stones composing it are of smaller dimensions than the others, and are in the native condition, while those of the outer circle have been

roughly hewn. The capstones also bear the marks of having been rudely cut into their present shape.

Originally the outer colonnade contained thirty of these great pillars, with their capstones, or imposts. Only seventeen of them now remain in position. The inner circle consisted at first of forty pillars, only a part of approach to the structure. Traces of smaller avenues are also to be found, and in the vicinity of the ruin are various stones which seem to have constituted originally a part of the general design. The whole aspect of the ruin as seen to-day is weird and spectral in the last degree, and the beholder can but be impressed with the strangeness,

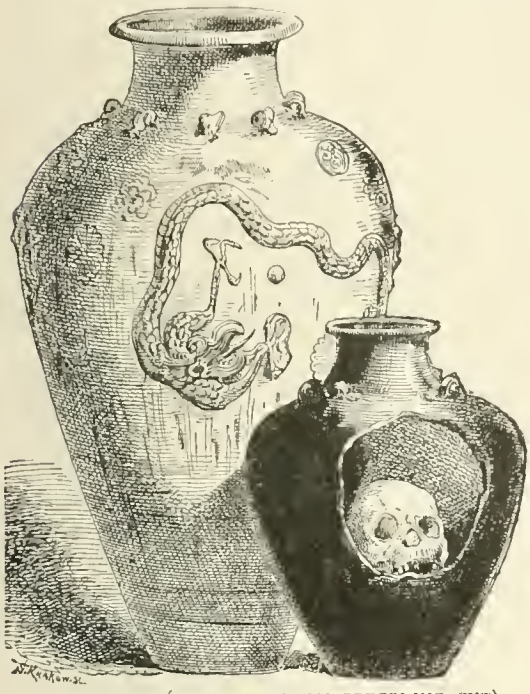
PREHISTORIC GRAVEYARD OF QUATERNARY PERIOD, NEAR LITTAI, IN CARNIOLA, AUSTRIA.

which are now standing. Within the inner circle another series of pillars, oval in character, and originally nineteen in number, are found, which rise in height toward the center. Around the outside rim was drawn a moat and a rampart about three hundred and seventy yards in circumference. On the northeast of the great circle and running out for a distance of about six hundred yards, there are evidences of as well as the antiquity of the monument before him.

Stonehenge has long been a fertile topic in tradition. The oldest story of all is that given by Nennius, in the ninth century. He declares that the structure was erected by Aurelianus Ambrosius, in memory of four hundred British chieftains who were slain there by Hengist and his Saxon barbarians, in 472. At

Stories of Nennius and Cambrensis.

the close of the twelfth century, Giraldus Cambrensis, another annalist, tells a long story of a great pile of stones called the Giant's Dance, anciently found



BURIAL URNS (ENLARGED FROM PRECEDING CUT).

in Ireland. He narrates that the stones in question were brought to Ireland by a company of Titans out of Africa, who set them up on the plains of Kildare, not far from the castle of Naas. "These stones," continues the story-teller, "Aurelianus Ambrosius, King of the Britons, procured Merlin, by supernatural means, to bring from Ireland into Britain. And that he might leave some famous monument of so great a treason to future ages, in the same order and art as they stood formerly, set them up where the flower of the British nation fell by the cutthroat practice of the Saxons, and where, under the pretence of peace, the ill-secured youth of the kingdom, by murderous designs, were slain."

This story happily illustrates the compass and authenticity of mediæval history. It is well known that the pillars composing the ruin of Stonehenge were taken from stone quarries in the neighborhood, so that no African giants were needed to bring them across the sea. It is also well established by an examination of the mounds in the vicinity that the structure belongs to a period not only earlier than the invasion of Hengist and his Saxon marauders, but long anterior to the conquest by the Romans at the beginning of our era. It is true that no mention is made of Stonehenge, by name, in the Latin authors, but Hecatæus, a Greek historian, who flourished at Miletus about 550 B. C., describes a magnificent cir-

Authenticity of mediæval history illustrated hereby.

VIEW OF STONEHENGE.

cular temple, situated in what he calls "The island of the Hyperboreans, over against Celtica," and the description is of a kind to warrant the conclusion that the edifice in question was no other than Stonehenge.

Extent of burial mounds in connection with Stonehenge.

Clustered around this great ruin of prehistoric times are many tumuli, containing the dead and the relics which were buried with them. No fewer than three hundred burial mounds are found within a radius of three miles from the stone pillars marking the site of what was doubtless a primitive temple. From this it would appear that the whole area round about was an ancient cemetery, with some sort of barbaric temple in the center. The tumuli are manifestly tombs. In every case, on opening one of these mounds, the remains of the dead are found. In the great majority of cases the interment has been by cremation, and the evidences show that the manner of sepulture was identical with that generally employed in the age of bronze.

GROUND PLAN OF DANISH CROMLECH.

Positions of the primeval dead in sepulture.

If we open one of the tumuli—and hundreds of them have been explored—we shall find invariably the remains of one or more human beings. Here again we discover that difference of instinct in method which has always characterized the doings of men. The dead are placed in two postures, one sitting and the other prone, after the manner employed in modern burial. There seem to have been pains taken in the adjustment of the body in a posture befitting repose; and in determining what this should be, some of the prehistoric tribes chose one position and some another. The same variety has been noticed in the case of our Indian aborigines in America, many of whom arrange the bodies of the dead in a sitting posture. In the prehistoric burial mounds which we are now considering, utensils and food were placed

GROUND PLAN OF DANISH DOLMEN.

SEPULCHRAL STONE CIRCLE.

about the body as if to serve the dead in the land of the hereafter. It is here that the best revelation of the manner of life peculiar to these people has been made, and the best evidence afforded of the epoch to which they belonged.

The mounds belong certainly to the age of bronze.

As already said, the implements exhumed from the tumuli are almost invariably of bronze. In a few instances iron weapons have been discovered, but it has been invariably found on closer scrutiny that the same have resulted from a subsequent burial in an old grave. Not a single instance is known of the recovery from a tumulus, either in Western France or Great Britian, of implements or other relics belonging to the period

POSITION OF SKELETONS IN A TOMB OF THE STONE AGE.

of the Roman ascendency, and in only a few cases have the discoveries carried the antiquary back to a period more remote than that of the age of bronze.

We may for a moment consider the facts before us from a higher point of view. The tumuli of the British Isles are only one of several kinds of receptacle for the prehistoric dead. The palæolithic and neolithic ages, as well as the age of bronze, had their burial places, funerals, and rude theories of death. Barbarism developed into several forms of burial method according to the locality and the situation. The manner of disposing of the dead was, indeed, one of the most striking features of the barbaric life. It would appear that from the earliest emergence of man into the conscious life the fact of death impressed the living more seriously than any other phenomenon whatsoever. This led, even in the lowest stages of barbarism, to the institution of rites and ceremonies connected with the final putting away of the body. It was one of the points at which the primitive tribes easily diverged in their customs and methods. There was from the first a contest of belief as to the best manner of disposing of the dead. One plan was to reduce the body to ashes, and another was to preserve it in some situation where it might be protected from disturbance and, we might say, sacrilege; for we may well believe that among the primal instincts of savages one of the first of those sentiments which tend to the elevation of mankind was respect for the body.

Diverse methods of races respecting death and burial.

FUNERAL IN THE PALÆOLITHIC AGE.—Drawn by Emile Bayard.

Throughout primitive Europe the evidences of aboriginal burial are discoverable in hundreds of localities. These have been studied with diligence by antiquaries, and the results of the inquiry generalized. We are able to distinguish the older places of sepulture from the newer—the palæolithic cavern from the more recent neolithic burial place, and still more distinctly from the burial places of the age of bronze. The conditions of savage life in the respective periods are sufficiently well known to furnish the materials for the reconstruction of that primeval half-savage society which prevailed for many ages.

Burial grounds of different ages may be distinguished.

FUNERAL IN THE NEOLITHIC AGE.—Drawn by Emile Bayard.

It was the custom of the tribesmen when one of their number died to assemble at the scene of death and prepare for the funeral. Generally, after rude pagan ceremonies, a procession was formed and the body was borne away to be either burned with loud lamentation or deposited in some tomb which nature had prepared in the rocks. Could the observer from a distant and civilized age have been lifted up over Western Europe in the epochs of aboriginal barbarism he might have seen, winding here and there in solemn manner, the funeral processions on their way to the burial places of the tribe. The scene was as picturesque as instructive. The place chosen for burial or incineration was generally a solitude of cliff and wild There, about the entrance of the cavern, might be seen the gathered friends of the dead lamenting with wild gesticulations that going forth of man-life which

they—though barbarians—had already discovered to be without return.

Funeral processions and rites of sepulture.

The next point of interest to be noted in our examination of the prehistoric burial places is the character of the remains in such situations. As in the case of the cave dwellers, we may here learn much about the stature, form, and general character of the aborigines of Europe.

FUNERAL FEAST IN THE AGE OF BRONZE.—Drawn by Emile Bayard.

The most striking fact in connection with the skeletons of the people buried in the tumuli of the British Isles is the variation presented in the skulls. There seem to be three distinct types of skull revealed by an examination of the tombs. These are what are called long skulls, or dolichocephalic crania; short skulls, or those defined as brachycephalic; and a type between the two extremes, called orthocephalic, or medium-headed. The orthocephalic skull is most nearly like the skull of civilized peoples, whereas the other two types depart very much from the common standard. As far as we are able to discover, the two extreme varieties of crania belonged to very primitive peoples, while the intermediate form is of more recent development as well as more symmetrical character.

The three types of skulls discovered in the tombs.

The long skull, such as has been found in many of the tumuli of Great Britain, has almost as great a measurement as that of the Neanderthal head described in a previous chapter. Not that the long and narrow skulls of the tumuli are so distinctly animal as the

Character of dolichocephalic and brachycephalic crania.

one to which reference has just been made, but their striking feature is the long suture and great measurement from front to rear. The brachycephalic crania discovered in the mounds are exactly the opposite of this. They are peculiarly short from front to back, and in many cases suggest to the antiquary that they have been squeezed up into unnatural dimensions. It seems, however, that no marks of artificial pressure have been discovered, and doubtless the short skulls are just as nature produced them.

Another circumstance well calculated to excite the keenest interest is now to be noted. *There is a constant and curious relation between the shape of the skulls and the shape of the tumuli in which they are buried.* There are two kinds of mounds: a circular tumulus and an elongated barrow; and it is found on examination that the dolichocephalic heads are invariably *in the long barrows*, while the short heads are in the circular mounds! The evidence is conclusive that this arrangement could not have been accidental, and it is almost equally clear that two races, belonging perhaps to different prehistoric epochs, are represented in these tombs. Very careful explorations have been made by skillful antiquaries. Dr. Thurnam, of England, has made accurate measurements of a hundred and thirty-seven skulls just as they were taken from the British mounds. Of these, sixty-seven were exhumed from long barrows and seventy from circular tumuli. Not a single long skull was found in a round tumulus, or a single short skull in an elongated barrow; from which it appears conclusive that the long-headed tribes buried their dead in the elongated tumuli, while the circular mounds were used for the burial of the short-headed people. It would be pressing the argument too far to say that these prehistoric inhabitants of Great Britian made the long barrows which they raised over their dead in *imitation* of the shape of their heads, but the fact remains that such queer analogy does exist and remains to be accounted for.

Coïncidence in shape of skulls and burial mounds.

The tumuli contain almost invariably a sort of stone sarcophagus in which the human remains are deposited. In the cases where cremation has been employed, the ashes of the dead are put into a rude urn and the latter buried in the place of the body. In the stone box are found the implements and utensils which were left with the dead, and this fact, as already indicated, points to a belief in a hereafter. It is perceived that these rude people had hopes of a continuous existence or a revival of existence beyond the event of death. This does not, however, imply any belief in what is called the doctrine of the immortality of the soul. The evidences about the dead in these mounds all point to the confidence which the living then had of the continued *material* existence of the person buried. Every article found in connection with the body is clearly related to the ordinary daily wants and conveniences of the deceased, and the significance of such association of his implements, and even of food, with the person deceased, points only to the belief that the dead would continue as he had been, or at least revive at some time, in his former state of being.

Sarcophagi and contents; provisions for the dead.

It must not be supposed that all of the facts here referred to are deduced from the mounds locally associated with the old ruin of Stonehenge. They have been gathered rather from many sources.

General distribution of burial mounds in Western Europe.

FUNERAL OF A CHIEFTAIN IN THE AGE OF IRON.—From the *Magazine of Art.*

and are typical of all. This species of burial under mounds was practiced in all parts of Great Britain and nearly everywhere on the Continent. The peninsula of Denmark is almost picturesque with tumuli, and under them all are the remains of a prehistoric people. Perhaps not a single county in England is without its monuments of this kind. Not only in Wiltshire, but in Gloucestershire and Berkshire, and, indeed, everywhere on the island such evidences of a primitive people are discovered. In Ireland, also, and in Scotland, the tumuli are plentifully scattered over the country, and are indeed in some places so abundant as to suggest the frequent burial grounds of modern nations.

TUMULUS WITH STONE ENTRANCE, NEAR UBI, DENMARK.

The suggestion has been made above that two or three races contributed to people these ancient sepulchers. This belief has well-nigh passed from theory into fact. It has been noticed that all the stone implements discoverable in the burial mounds have been associated with the long heads, whereas no weapon or utensil of stone has been found in any sarcophagus where the short-headed tribes put away their dead. In the vaults of the latter, on the contrary, the implements are all of bronze, and the workmanship indicates a very great advance toward civilization as compared with that of the utensils found in the long-head tombs. It should be said, moreover, that the stone tools and weapons in connection with dolichocephalic skeletons are not by any means of so primitive a pattern as those found in the shell mounds or the cave dwellings of the Continent. They are, on the contrary, neolithic, or new stone, implements, which shows that the long-headed tribes flourished in the epoch before, but approximate to, the age of bronze. It might not be hazardous to infer that the round heads came into the island as a bronze-bearing soldiery, overcame the long heads, or amalgamated with them, and then adopted like methods of burial. It has been remarked that the Lapps and Finns and several other existing races in the north of Europe are brachycephalic, and the hypothesis of an invasion from this region and a conquest of the prehistoric Britons is by no means beyond the limits of right reason.

Evidence that several races were concerned in the tumuli.

After Stonehenge, perhaps one of the most interesting monuments in the west of Europe is that of Carnac, in Bretagne. It consists of eleven rows of unhewn stones, set up after the manner already described, but not in circles. Some of the pillars are as much as twenty-two feet in height. But in their present state they differ greatly in dimensions, some being scarcely discoverable above the level of the plain. As far as the antiquary has been able to trace a design for the ruin, it appears to have been a series of avenues several miles in length. At the present time, however, it is difficult to make out the entire area or the

Megalithic ruin of Carnac in Bretagne.

complete idea of the builders. The adjacent farms have encroached upon what was doubtless sacred ground, and many of the stones, even whole sections of the avenues, have been cleared away. In other parts it is still easy to note the direction and course of the rows of columns, the width and character of the intervening spaces, and something of the general design.

It is believed by scholars best informed on the subject that this ruin of Carnac has an origin somewhat more remote than that of Stonehenge. Around the latter the tumuli belong, for the most part, to the age of bronze. But the mounds of Bretagne, and it is thought Carnac itself, are relics and monuments of the neolithic age of an earlier date.

The fact has been mentioned that in many of the tumuli more bodies than one have been deposited. It appears, however, that in most cases these multiple buryings in the same vault took place at different times. The primary burial, perhaps, included but a single person, but at a subsequent time another body would be deposited in the same rude sarcophagus which held the first. This would involve the opening of the mound. The stone box in the bottom was generally large enough to contain the remains of several persons, especially when the sitting posture had been adopted in sepulture. The prehistoric people had the same respect for the bodies of the dead that modern races have cherished. It appears that only in rare instances were the original remains displaced from the sarcophagus to make room for a new occupant. In case of second burial, there was merely a rearrangement of the old skeleton to make room for the new.

Practice of successive buryings in the same mound.

It has already been mentioned that cremation was practiced at the same time with the common mode of burial. The coëxistence of these two methods of disposing of the bodies of the dead has been noted in the case of many peoples, ancient and modern. The Eastern nations employed both. The Greeks sometimes buried their dead and sometimes burned them to ashes. So also the Romans, and even at the present time we note the reäppearance of cremation and its contest for the mastery as a scientific method opposed to the unscientific, and even superstitious, disposition of dead bodies in the earth.

Coïncident usage of earth burial and cremation.

RUINS OF CARNAC, BRETAGNE.

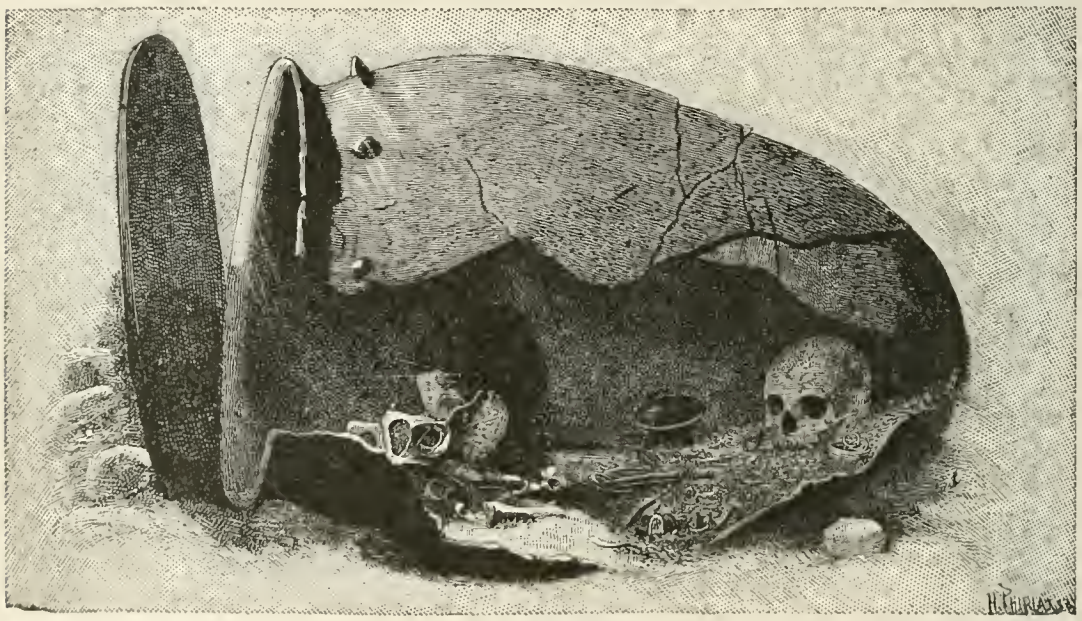
In the case of the tumuli we know, from the examination of the other relics left in connection with the burial urns, that the latter belonged to the same epoch as the commoner method of sepulture. It must be noted in this connection that incineration of the dead was by no means so complete in the times of which we speak as by the superior processes of modern times. The ancients, especially the barbarian ancients, were unable to produce a high degree of artificial heat. The bodies of the dead were simply exposed to the action of an open

Imperfect incineration of prehistoric remains.

fire, and there was a larger residuum to be put into the urn than the mere handful of ashes left from the cremation furnace of the present time. In general, the larger and heavier bones were merely charred, and these, together with the ashes, were put into the rude urn and set in the stone box in the bottom of the tumulus.

Another fact of much interest is that the relics of human life and human need, so many times referred to in the preceding pages as accompanying the remains of the dead, are by no means always found in the tumuli. In very many, even a majority of cases, nothing at all is found except the skeleton or skeletons of them that were buried. A gradation is noticed in the number and character of the weapons, utensils, and articles of food deposited with the body. Sometimes they are plentiful and sometimes scarce. This indicates a difference in rank and station among those deceased and among their friends who buried them. Doubtless it is improper to use the words *rich* and *poor* in this connection; but even in the reduced stages of human evolution distinctions in property and respect begin to appear, and it was no doubt on this basis that the distribution of relics in prehistoric graves was made. The wealthy, if we may use the term, had more respect and more emblems of that respect in the day of burial. The poor, as in all ages, went down to the potter's field without such tokens of esteem. It is to be presumed that the articles deposited generally belonged aforetime to the person buried, and inasmuch as one would have many things and his less enterprising fellow have nothing but a spear or an ax, the first would be buried with many relics and the other with few or none.

Deposition of gifts and provisions for dead not universal.



BROKEN SEPULCHRAL URN, SHOWING INCINERATED REMAINS.

The two English naturalists, Bateman and Greenwell, have given us the results of their observations in about four hundred tombs belonging to the prehistoric age. Of the two hundred and ninety-

Classification of skeletons and implements in the mounds.

seven examined by Mr. Bateman fully one hundred had no relics of any sort other than the bare skeletons of the persons buried. In forty of the tumuli he found drinking vessels and food vases. A hundred and five had implements and weapons in connection with the skeletons, and in thirty-five instances articles of pottery were found. Of the one hundred and two mounds opened by Mr. Greenwell only thirty contained implements or weapons, and the other seventy-two were devoid of relics. In all the tombs which this naturalist examined the skeletons were found in a sitting posture; never recumbent.

INCINERATION OF THE DEAD, IN THE AGE OF THE TUMULI.
Drawn by Emile Bayard.

In some of the mounds there are evidences of what may be called the beginnings of ideality. Instead of actual weapons and implements, *models* of the same are sometimes buried with the dead. It has been noticed in modern times, particularly among the Esquimaux, that this usage prevails. A mock weapon is put in the place of the real one in the tomb. Another fact must be borne in mind in this connection, and that is that the presence of implements and weapons in the graves of these ancient peoples does not indicate positively their belief that the dead would revive to need and use their weapons again. The symbolical idea, the idea of commemoration, and the influence of tradition may all combine to give another significance to the presence of these

Deposition of models; what the findings signify.

relics in the grave. Doubtless at the first they must have been buried with the dead in the belief that they would be useful to them in another life analogous to the present. Custom in this respect would soon grow into habit, and habit would presently have the force of law. The usage would perpetuate itself after the belief had perished. To the present day, and even among the most civilized peoples of the world, many usages obtain with respect to the dead, the significance of which could not be deduced from the literal facts present in the inquiry. Nothing is more common than to deposit with the dead various articles which have simply an affectional and commemorative signification. The marriage ring remains upon the finger. Favorite ornaments are carefully adjusted as the owner was wont to wear them. Particularly are the regalia and insignia of rank put into the tomb with the departed. The priest is buried with his cross, the sailor with his compass, and the warrior with his sword. None of these things signify an existing belief in the further usefulness of these articles to the dead. They are commemorative merely, conventional marks of rank, of association, and affection on the part of the living.

To a certain extent these principles no doubt operated with the prehistoric peoples; and all inferences relative to the meaning of the articles found in the barbaric tombs of extinct races must be checked and corrected by what we know to be the general laws and tendencies of human nature. Opinions and beliefs pass through many mutations, and custom is known to be more persistent than either. Long after the fervid conviction of the truth of a certain doctrine and theory of human life and death has passed away or given place to a mild and inoperative assent of the mind, the ancient usages which were based on that belief in the epoch of its pristine vigor continue to be observed, and these might well convey to distant ages an erroneous impression of the current opinions of the people.

Meaning of articles must be inferred from human nature.

CHAPTER XX.—PREHISTORIC RACES OF AMERICA.

VESTIGES of prehistoric races of men are by no means limited to Europe and the countries of the East. In the three Americas also such traces of peoples unknown to history are abundantly distributed. It remains to note in the present chapter at least the prominent features of the ancient monuments of our own country and of the continent south of the isthmus of Panama. It is the intention merely to sketch the outline of our primitive monuments, and to deduce therefrom a few general conclusions relative to the peoples by whom they were built and the ages in which they flourished.

In all parts of North America, from the Alleghanies to the far West, and from the great lakes to the gulf of Mexico, a class of monumental remains may be observed by the traveler and antiquary sufficiently impressive in their extent and variety, and strikingly suggestive of a remote antiquity. Even

Abundance of mounds in the three Americas.

in the countries east of the Appalachians many such monuments are found. They were noted on the first arrival of the civilized races on this continent, but their significance was long ignored. It was supposed at the first that they were the works of the then existing tribes inhabiting the New World. In fact, many of the remains which are now the subjects of antiquarian research were the products of the barbarous peoples of North America and the semicivilized races of Mexico, the Central Isthmus, and Peru. It requires some degree of acumen at the present day to distinguish between those monumental remains which are referable to the peoples possessing this continent in the times of the discovery of America and subsequent, and those other more monumental trophies of the ages long before. Modern inquiry, however, has easily sifted this question to the bottom, and the scholar of to-day is no longer perplexed by the confusion of the later with the earlier monuments.

GREAT MOUND NEAR MIAMISBURG, OHIO.

Perhaps at the beginning of the inquiry it may be well to note the extreme antiquity of the tumuli and earthworks of America as indicated by their geological relations. On this continent, as well as in Europe, the great rivers were aforetime much vaster in breadth and volume than at the present day. They filled the valleys from hill to hill with great floods, sweeping on to the sea. In the long course of ages the rivers shrank to comparatively their present dimensions, and in doing so withdrew their waters from the hills which constituted their barrier on either side, and sought a narrower valley and a lower level. There have thus been formed what may be called the first or lower river bottom and the second plateau above.

Antiquity of the mounds indicated by their situation.

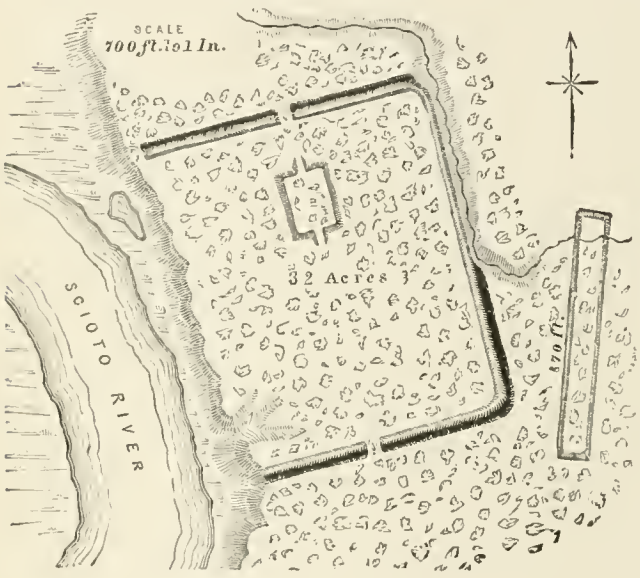
It is, perhaps, impossible to determine at what remote period this retreat from the higher to the lower level and from the broad floods of the earlier geologic epoch to the modern streams which traverse the continent at the present time occurred; but such is the history of the change which has taken place. In no single instance has one of the prehistoric mounds of our country been discovered on the lower terraces formed by the river. They are found in many places on the higher plateaus and on uplands round about, but never on the present or recent levels of an existing stream. From this it has been clearly inferred that the mon-

Prehistoric earthworks not found on lower river levels.

uments in question were built before the recession of the rivers into their present channels; and it can hardly be doubted that the races who flourished in that primeval age looked down from a humid atmosphere on a world abounding in turbid waters.

The frequency of the American tumuli has already been remarked. They abound. In all parts of the Mississippi valley the outlines of earthworks and burial mounds may be discovered.

General mystery and interest excited by the mounds.



EARTHWORKS AT CEDAR BANK, OHIO.

Their numbers reach easily into thousands, and their importance was such long ago as to constitute the subject-matter of the first volume of the Smithsonian *Contributions to Knowledge*. They have demanded the attention of scholars and antiquaries during a great part of the present century. Though vast stores of information have been gathered from their exploration, the mystery of their ultimate origin and design remains as impenetrable as when they first drew the attention of the pioneers.

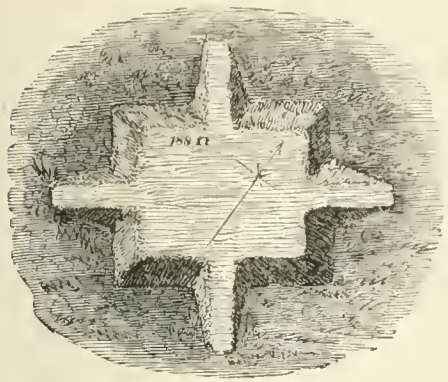
In some localities the mounds and tumuli are much more frequent and important than in others. In general, the upper terraces along the great streams which contribute to the Father of Waters are the sites of the most striking and instructive of these monuments. But beyond the limits of our own country, in Central America, in Mexico, and in Peru, and other parts of the southern continent, these evidences of extinct civilizations are plentiful.

The valley of the Ohio seems to have been a favorite seat and stronghold of the prehistoric peoples by whom these monuments were reared. One of the most famous of them all is on the banks of the Little Miami river, and from its evident character is called Fort Hill. Another work of great importance is at Newark, Ohio. One of the greatest of the mounds is situated on the plain of Cahokia, Illinois, opposite the city of St. Louis. Another of striking character is found on Grave Creek, near Wheeling, in West Virginia, and still another at Miamisburg, in Ohio. One of the most striking of all is in the same State, at Cedar Bank, on the Scioto, and in various parts of Ohio, Indiana, and Illinois such remains are found, even at random. Far to the northwest, in Wisconsin and Iowa, the primeval race left its imperishable vestiges; and some of the most interesting mounds of the kind are discovered in those States. South of the river Ohio, also, such remains of primeval man are plentiful. Tennessee abounds in mounds, and Alabama and Mississippi have many such remarkable monuments. Indeed, it would be easier to specify in what parts of the great valley of the Mississippi

Ohio valley a favorite seat of prehistoric works.

such remains of an extinct race are *not* to be found, than to note all the localities where they exist.

The American monuments, like those



PLAN OF SQUARE MOUND, NEAR MARIETTA.

of Europe, differ greatly in dimensions, importance, and general character. The most striking of them all were manifestly military fortifications. These are laid off and executed as if by an engineer of modern times, though the design is greatly different from any that would now be used in military operations. Great is the extent and area covered by some of these works. The remarkable monument at Fort Hill, Ohio, has a circumvallation of nearly four miles, and the height of the mole, or *agger*, is from ten to twenty feet. Outside of this is a ditch, and the whole arrangement was manifestly one of defense against a powerful enemy. In the first place, an exact circle of great extent is drawn upon the hill; and around the circumference the earthworks are constructed. The circle is not quite closed on one side, but has a protected entrance, flanked with long lines of earthworks branching to the right and left. These, in their turn, are defended by other lines running out nearly in the form of a great rectangle in front of the entrance to the circle. Even beyond this rectangle, at two of the corners and in other positions, are smaller circles and long mounds of earth of peculiar form. No one can view the situation and consider its extent, and even the skill with which the fortifications were planned, without being amazed at the strength, capacity, and even genius of the people by whom they were constructed.

Military design of the principal circles and mounds.

The great fortifications at Newark, Ohio, are fully two miles square. More than twelve miles of embankment, ranging from two to twenty feet in height, mark the outline and nature of the defenses. The mound on the plain of Cahokia is seven hundred feet long and five hundred feet in breadth. Its height is

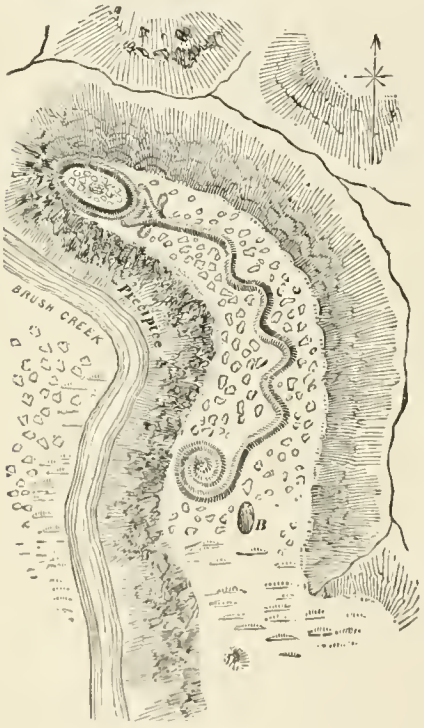
Ohio fortifications; the mound of Cahokia.

EARTHWORKS AT HOPETON, OHIO.

ninety feet, the superficial area about eight acres, and the contents nearly twenty millions of cubic feet. The mound on Grave creek, in West Virginia, has an elevation of seventy feet, and the one at Miamisburg, Ohio, is nearly as great in elevation and extent.

We come now to consider some of the strangest monuments which the human race has left in its track. It has been discovered that many of the embankments and outer works under consideration have the form of men or animals.

Earthworks in the form of beasts and serpents.



GREAT SERPENT MOUND, IN ADAMS COUNTY, OHIO.

It is not uncommon in the States of Wisconsin and Iowa to come upon one of these ancient works which, considered in its entirety, presents a huge effigy of man or beast. There is no mistaking the design. It was manifestly intended to represent a living creature, laid prone or in profile on the earth. The effect is that of a huge bas-relief, developed from the ground. Still more astonishing is the great serpentine mound on the banks of Brush creek, in Ohio. The mole of earth representing the serpent is, from head to tail, over a thousand feet in length. The figure is five or six feet in height and nearly thirty feet in width at the base, diminishing gradually toward the tail. At the sides of the neck are two flat, or ear-like, projections, and the mouth stands wide open. Right in front of the mouth, and placed as if issuing therefrom, is a large circular elevation four feet in height, in the shape of an egg. It is as though the serpent had either ejected or was about to swallow the great body partly inserted in its jaws! The long line of the work representing the serpent's body is arranged on the curvilinear crest of a natural elevation, parallel with the stream, and the whole may well be regarded as one of the most astonishing relics of human caprice.

The serpentine mound of Brush creek, Ohio.

In connection with these mounds and earthworks are the remains of the dead. The circular mounds when opened generally reveal skeletons of a prehistoric race, and in connection with these are found the implements and utensils peculiar to the epoch in which the mounds were erected. Another fact of interest in connection with the greater works which we are considering is the association of what appear to be religious structures and designs. Within the circumvallation of what was manifestly a military defense, will generally be found what has been thought by antiquarians to be the outlines of a sacred edifice or, at any rate, a sacred site where the religious ceremonial of the people was doubtlessly celebrated. Many marks of the significance and purpose of this

Religious purpose manifested as well as the military.

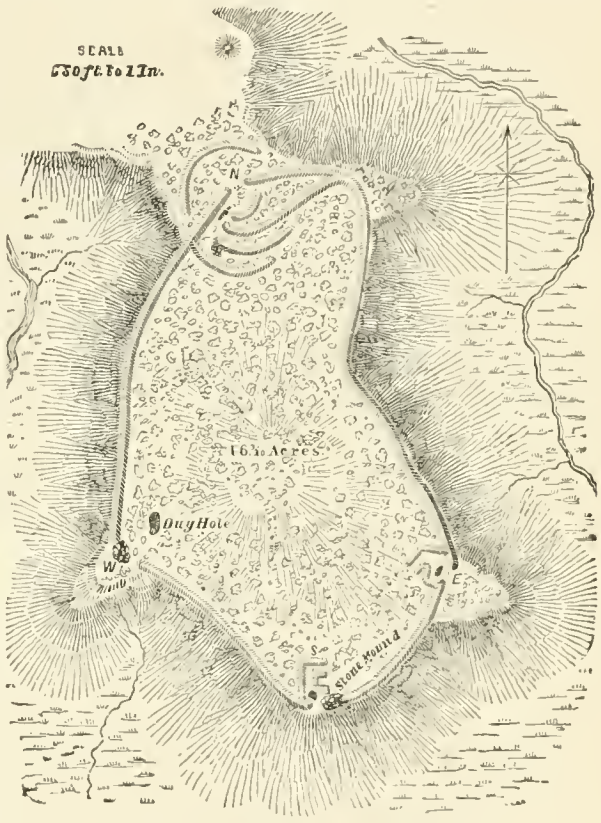
part of the works have been discovered and explained, from which it is inferred that there was something more permanent about the fortifications than would be expected in the case of transient defenses thrown up against an enemy. These earthworks appear to mark the sites and strongholds of the people, to which they rallied in the times of national tumult, and which constituted a sort of military capital for the country.

The American antiquities under consideration have given rise to many theories and speculations. Ever and anon some new and empirical view has been put forth as to the origin of the mounds and fortifications and the people by whom they were reared. It is surprising to what extent these speculations have been carried. Those who have theorized on the subject have in many instances been entirely unscrupulous in regard to the means by which their theory was to be substantiated. Forgeries innumerable have been perpetrated with a view to bolstering up some preposterous theory about the mound builders. Inscriptions have been made to order, in Greek and Hebrew and Celtic, and even in the Runic characters of the Northmen, to substantiate what the forgers had given out as an explanation of the mounds. But meanwhile a truer interpretation has been going forward under the care of scientific antiquaries, and the foolish stories which have been invented relative to the prehistoric earthworks of America will find no further credence among intelligent people.

Forgery substituted for scientific investigation.

Many are the legitimate inferences which may be drawn relative to the life and manners of the people by whom the American prehistoric monuments were built. In the first place, there are evidences of a vast and far-reaching intercourse among them. The relics that are found in the mounds are drawn from different and distant localities, and their character indicates, in general, a social and industrial state, in a tolerable stage of development.

Far-reaching intercourse; the mound potteries.



FORT HILL, BUTLER COUNTY, OHIO.

In the tumuli and earthworks we find many articles of pottery, greatly superior to the corresponding relics in the primitive tombs of Great Britain and the Continent. The American articles are frequently of elegant design. Many carved works in stone are found in the same situations, and ornaments of silver and copper, almost worthy of a modern jew-

eler, are taken from their resting places alongside of ancient skeletons.

The materials of these utensils and articles of adornment are derived from many and distant places. The source of the silver is not known, but the native copper has evidently been brought from the mines of lake Superior. The mica, of which other ornaments are made, is from the Alleghanies. Beautiful shells are found in the same situations, which had their home in the gulf of Mexico. Implements of obsidian and porphyry, of Mexican origin, are frequently discovered with the other relics. As to such implements and specimens of art of European origin as have occasionally been found in the sepulchral mounds of the New World, they are to be traced unmistakably to later burials in the ancient tombs.

Materials deposited have been brought from great distances.

VASES FROM MOUNDS.

Another deduction of much importance is that which relates to the extent of these prehistoric populations and the nature of their industries. It must have been a populous nation out of whose activities sprang these great mounds and fortifications. The amount of labor expended on such a monument as that in the plain of Cahokia is like the sum of the toil which reared the pyramid of Cheops. Here we have a mass of twenty millions of cubic feet of earthy material heaped up in regular form and with a definite design. The labor of many thousands was required to do it; and when we reflect upon the imperfect facilities which the old races possessed for the execution of such works, we are still further astonished at the magnitude of the enterprise.

The mounds constructed by populous races.

It is known to all that tribes inhabiting a country in the character of hunters and fishermen are always sparsely distributed. The most abundant natural supplies are only sufficient for a small population. The hunting stage of society is, therefore, always limited to a small and widely scattered population. It requires the agricultural stage of development to produce and maintain a thickly settled people. The artificial resources of the soil must be added to the native resources of the woods before a great population can be created or maintained. Therefore, these prehistoric races who built the American mounds and forts must have come out of a primitive stage of barbarian life and entered upon the agricultural epoch. Their industrial life must have been large and regular to support and foster such enterprises as we have before us; and the methods and economy and distribution employed by them must have resembled, if they did not approximate, the methods and facilities of the historical era.

Mound builders had passed the hunting stage in development.

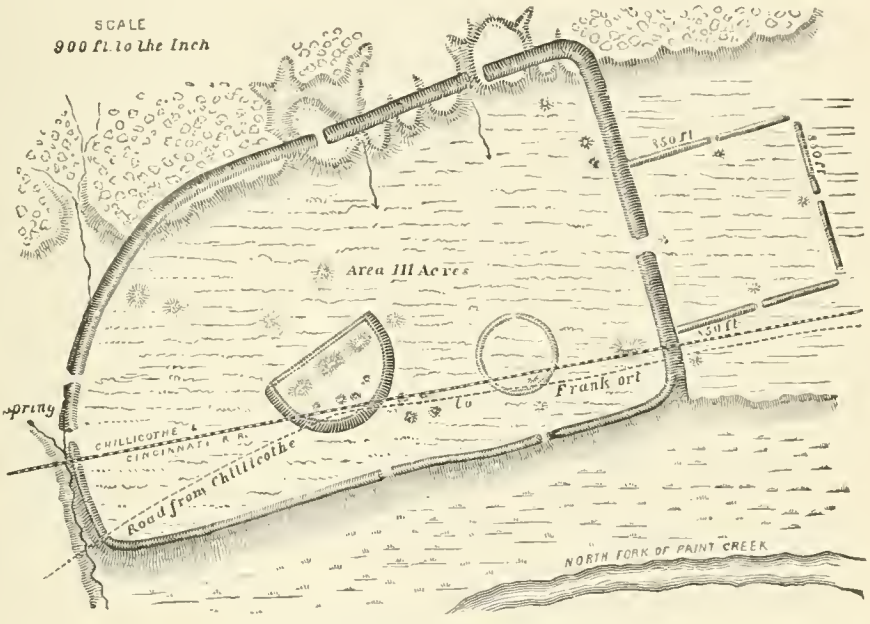
Still a third consideration is clearly deducible from the evidence of the mounds. A great fortification laid out with geometric precision and executed as if by regular engineering implies not

only a *defensive* array of the means by which a people would protect itself from attack and destruction; it also implies *an offensive and opposing power*, an enemy, numerous and dangerous to be combatted and warded off. It does not imply such an enemy as would be encountered in the hunting or nomadic stages of tribal development. That is, the means of defense would, under the common law of reason, be proportioned to the resources, aggressiveness, and skill of the foe.

Deductions from the military character of the works.

We can easily see, in these considerations at least, the outline of great nations contending for the mastery of the Mississippi valley. No other hypothesis will explain the facts. There must have been in these regions, in an epoch long antedating the era of the Red men, great agricultural peoples, with institutions of religion and war. There must have been intercourse and relations with other peoples like themselves, and these must sometimes have been relations of hostility. Indeed, it would appear from the strong military character of the greatest and most important of the monuments that war was, even in these prehistoric times, the most marked and vehement activity of the human race.

Great peoples demanded to account for American antiquities.

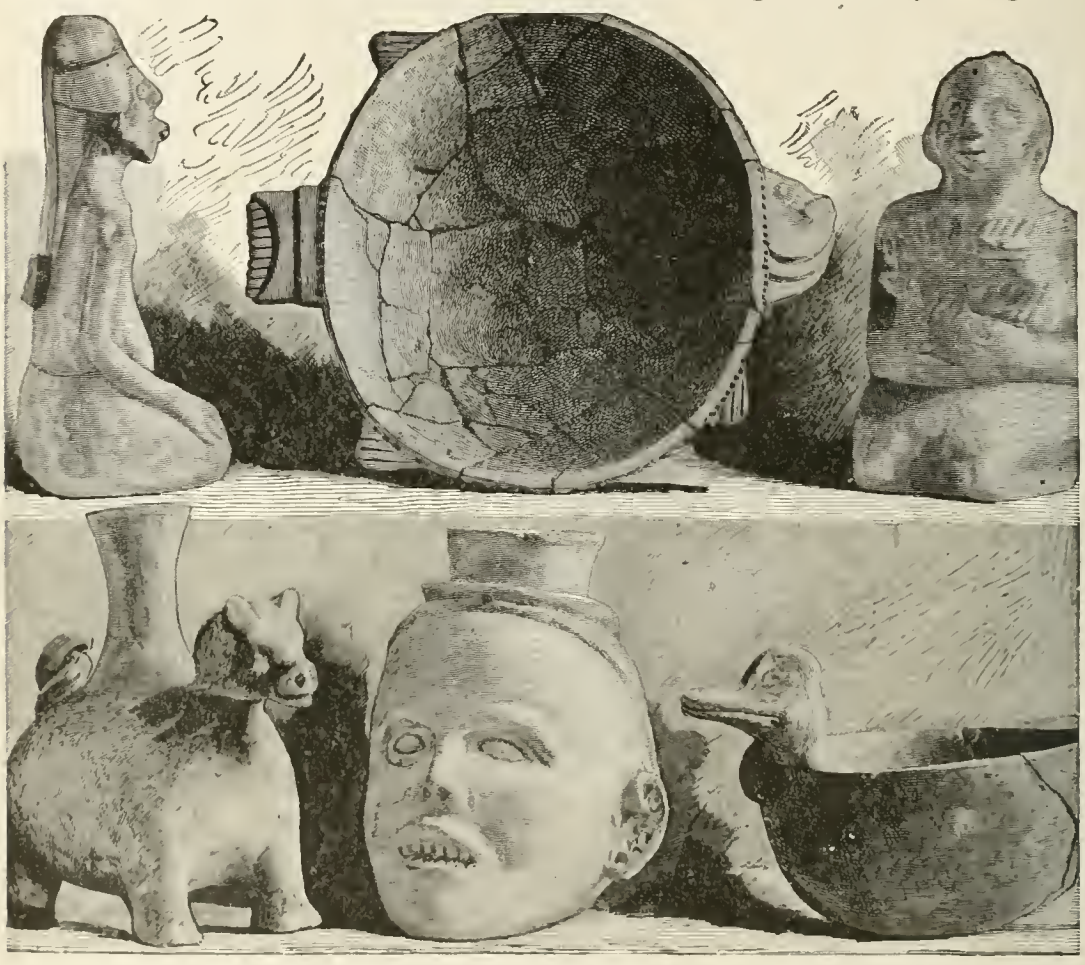


MILITARY WORKS ON PAINT CREEK, OHIO.

A comparison of the skeletons found in the earth mounds of the New World with those discovered in the tumuli of Great Britain indicates clearly the greater antiquity of the former. The earth surrounding the bones and other human relics in the American mounds is exceedingly dry and compact. The situation is generally favorable in the last degree to the preservation of human remains. Below the level of frost and entirely impervious to water, the dry earth surrounding and covering the vaults seems to have been untouched by any natural force for ages. And yet the skeletons in the American tumuli are nearly always far gone in decay. It is difficult to preserve them after their exposure to the air. They generally crumble as soon as they are taken from their long resting place. Even the skull bones generally turn to a white powder with a few days exposure to the atmosphere. In the British mounds the human remains are generally well preserved. Notwithstanding the moisture to which they have been

Evidences of greater antiquity in the American mounds.

exposed in the earth and the humidity of the air of England, the skeletons stand well on being exhumed, and are safely transferred to their places in museums. In some instances this may be done with the mound builders of America, but not often. The naturalist will not fail to discover in the conditions and common type, but those taken from remote tumuli show strong marks of ethnic divergence and peculiarity. As a rule, the crania and arm bones are strictly human in their development. They conform to the ordinary standards of measurement and proportion, but the skulls are foreign, not to say aboriginal,



POTTERY OF THE MOUND BUILDERS.—From *Magazine of Art.*

facts before him the evidences of a greater antiquity in the case of the American remains.

Indications of race variety; character of prehistoric crania.

Considerable variety of race has been remarked among the skeletons exhumed from the American mounds. They differ much in form and stature. Those in a given locality generally belong to a in their form and structure. They do not correspond with the crania of any existing race of people. On the whole, they are more in analogy with the skulls of those Oriental peoples who inhabit the eastern shores of the Pacific and the outlying islands. Some well-preserved skulls, taken from prehistoric mounds in Indiana and preserved in the museum of

that State, have a striking likeness to the heads of the Japanese, but are smaller in capacity than the crania of that people

On the whole, the prehistoric races of North America were rather under the average stature of the Red men or the civilized peoples of our continent. Sometimes remains are found which are really diminutive. Nor are the cases of this kind isolated or peculiar. On the Cumberland river, in Tennessee, several prehistoric cemeteries have been examined, in which the remains are uniformly of a small race. So marked is this peculiarity that some have supposed that the skeletons in question are those of infants and children. But a closer examination has proved them to be adult. The region in which these pygmy cemeteries are located is very favorable for the preservation of the dead. The soil is dry and sandy. The remains are invariably found in small stone boxes, and the observer can hardly believe that they are the skeletons of a full-grown, adult people.

The Little Men of the Cumberland and Tennessee valleys.

On thrusting down from the surface a sharp iron rod the stone lid of one of these small crypts may be found, and on excavating the earth the box can be examined in its undisturbed condition. The graves have been constructed originally by excavating small, oblong vaults and placing thin, undressed slabs of sandstone at the bottom, sides, and ends. After the burial a flat capstone was placed on top, thus completing the box. The inside of one of these miniature sarcophagi measures from ten to fourteen inches in width, ten to twelve inches in depth, and from fourteen inches to two feet in length. The space is so small that no well-grown person of an existing race, unless it should be a native Australian, could be buried in it, even in a contracted position. But the prehistoric skeleton which is found inclosed has, generally, room enough, though the parts are frequently flexed and sometimes doubled back. The mounds covering the prehistoric pygmies are thickly strewn in favorable positions along the banks of the Cumberland.

Character of the graves; the sarcophagi, and the remains therein.

The manner and epoch of the disappearance of the mound builders from North America remains conjectural. Nor is it likely that the ingenuity and adroitness of human scholarship will ever be able to exhume from the past the manner and time of their disappearance. On the whole, they would seem to have been a people worthy of a history; but their extinction was so complete that whatever may have been the extent and variety of their national life, all has gone out together. Philosophers have devoted volumes to the causes of national decline, and the question is still open for rational solution.

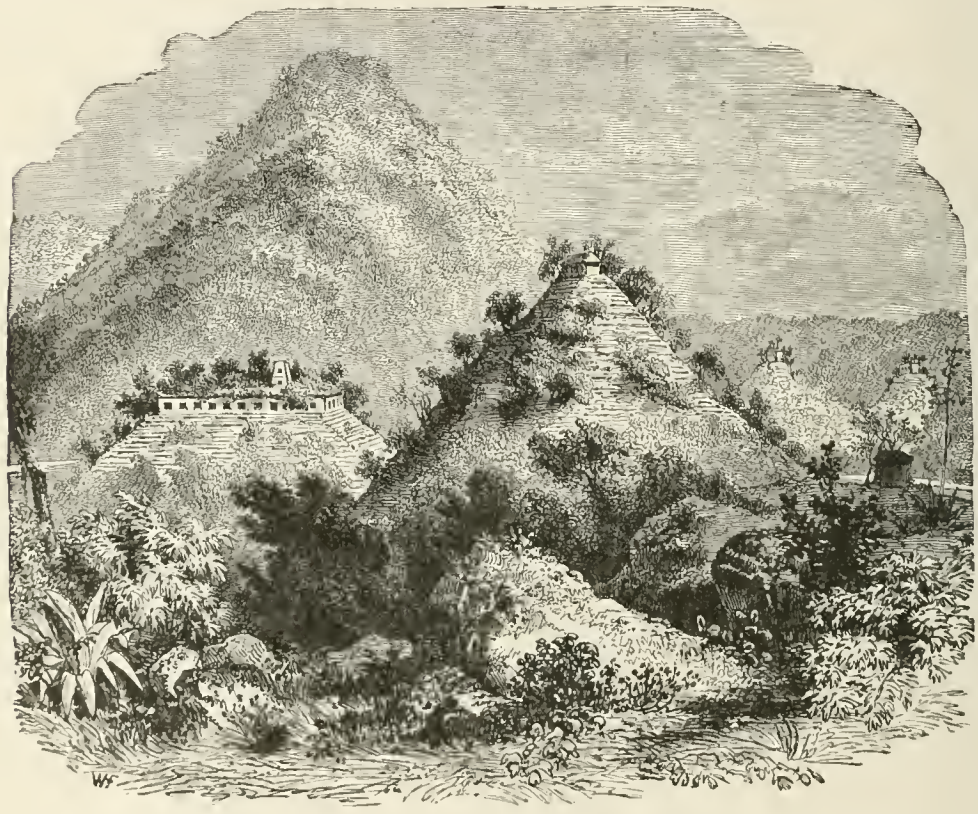
Manner of the extinction of prehistoric races unknown.

It may be truthfully urged that the seeds of ethnic decay exist in certain peoples in virtue of their own constitutions and the nature of their activities. Whether races grow old and die as the individual; whether different families of men are deflected by evolutionary processes from one phase of existence to another: whether sudden metamorphoses take place, in obedience to natural laws, such as are alleged to occur at rare intervals in the animal kingdom, are philosophical questions which the inquirer of the future must solve, if indeed they are soluble at all.

Certain circumstances, however, may be cited which are at least effective as assisting forces in the extinction of races. The prevalence of vicious and

luxurious habits, gradually supplanting the early and robust virtues of a people, tend unmistakably to national overthrow. The external forces of war and the great cataclysms of nature may also account for the destruction and disappearance of peoples. It is doubtless true that in prehistoric ages great submergences of peopled islands and continents have taken place, while others have risen, dripping, from the deep. Earthquakes and volcanic disturbances of the great crust of the globe have terrified and driven away what they have not engulfed. Finally, famine and pestilence have done their work on prehistoric as well as historic races. There are times within the recorded story of national life when not only the depopulation of great districts, but the extinction of whole nations has been threatened by the rage of epidemics. Among uncivilized peoples the accumulation of stores for the future is but little attended to. That prudence and foresight which keeps up the resources of life against the day of calamity are but little practiced by barbarians, or even by races half emerged from barbarism. For these reasons prehistoric peoples have been greatly exposed to the ravages of famine. At intervals the earth has unaccountably withheld her gifts. A few seasons of want in succession would be sufficient to exterminate an isolated and uncommercial nation, and that such calamities have actually fallen upon peoples like the mound builders of America can not be doubted.

Forces that tend to the extermination of races.



AZTEC RUINS AT PALENQUE, IN CHIAPAS, MEXICO.

Beyond the limits of the United States the tumuli and other evidences of bygone races are generally secondary. In

one sense they are prehistoric, but in another they fall, for the most part, within the activities of peoples who have been known within the historical epoch. The Mexican races that flourished in the days of the Spanish invasions, at the beginning of the sixteenth century, may well be considered as the remote extreme of the people by whom the monuments of Mexico were erected. The same is true of the peoples of Central America and of the Peruvians. The Aztecs, the Coztecs, the Guatemalian tribes, and the Peruvians, though much more advanced than the Red men of North America, are collateral with them in time and national development. In the case of our North American Indians, we know that they belonged to a different race from the mound builders, and that they flourished in an age long subsequent to the prevalence of the former on this continent. We have not the same clear evidence of the existence of a people back of the Mexicans, the Central Americans, and the Peruvians. Such a people may have existed, and there are evidences here and there of a truly prehistoric basis for that type of national life which was encountered by the Spanish invaders under Cortez and Pizarro.

Extinct peoples of Central America nearer to the present.

The ancient monuments of Mexico are among the most imposing of primitive ruins. They have a solidity and grandeur suggestive of the vast structures which the antiquarian encounters in the valleys of the Nile and the Euphrates. They differ fundamentally in their character from the mounds and fortifications of Central North America in this, that the latter were military structures in their first intent, while those of Mexico are based upon religion and its ceremonials. In the case of the North American tumuli, the long moles and circumvallations were created under the warlike purpose of the race that reared them, and the religious part of the monuments are only secondary to the dominant ideas of warfare. In the Mexican tumuli and pyramids the exact reverse is true. Evidence is not wanting that they at times subserved a military purpose—that within their ramparts the nation retreated and defended itself against the foe. But the general idea of all the monumental remains in the region under consideration is that of religion and priestly ceremonial. A general sketch of the character and purpose of the Mexican monuments can not fail to prove of interest.

Mexican monuments indicate the religious purpose.

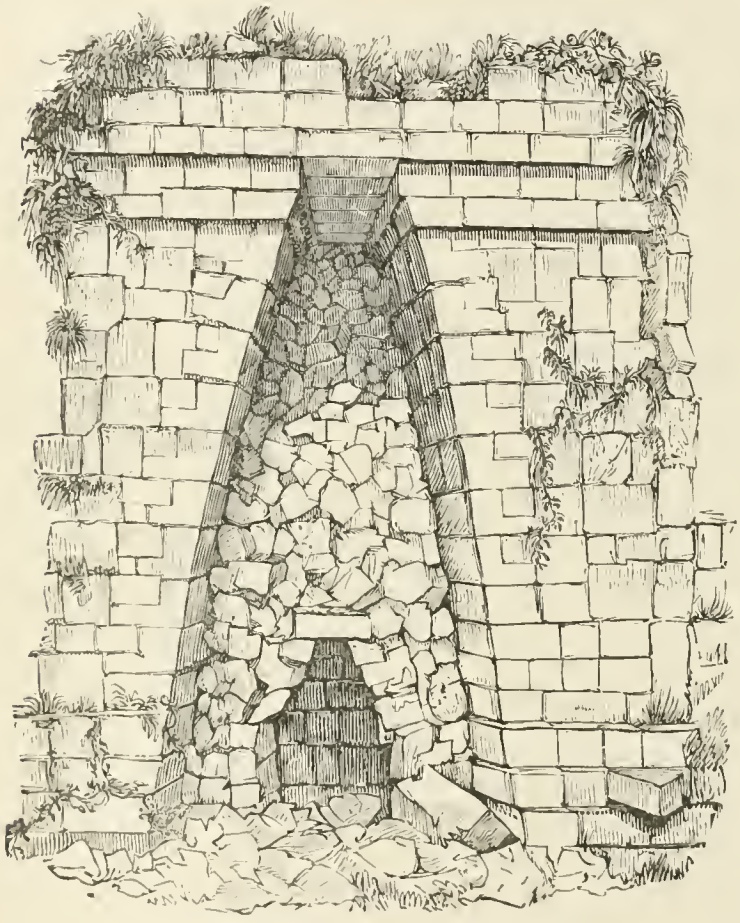
The structures in question have all, with very few exceptions, a common plan. A great square is laid off on the earth, with its four sides to the cardinal points of the compass. This square is surrounded with walls strong and high. The structure of the same is sun-dried bricks, or even in some cases stone. Centrally located within the great rectangle thus inclosed is the site of the temple. A square foundation of solid masonry is laid, extending to two hundred, three hundred, or even five hundred feet on each side. From this foundation a great structure like a pyramid is carried up in a succession of terraces. The design is almost identical with some of the oldest monuments of the human race found in the valley of the lower Euphrates and attributed to the ancient Chaldæans. In both instances the successive platforms of masonry grow smaller toward the top, and in both there is generally a deflection of the work toward one side, so that the pyramid does not stand centrally over the

Plan and materials of the pyramidal temples.

foundation, but nearer, as a rule, to the western edge. The eastern side of the pyramid, facing the morning sun, is ascended by a flight of steps to the upper square. The structure is truncated; that is, cut off above without being carried to an apex. On the upper platform is built the temple proper, which also faces the east. Sometimes on the terrace more temples than one are reared. It is in evidence that several deities were worshiped from the same platform. Each had his own fane and ceremonial.

Temples of the kind here described were plentiful at the time of the Spanish invasion of Mexico. Cortez declares that he found fully four hundred of them in the state of Cholula. Doubtless the number within the more important state of Anahuac, embracing the plateau of the Mexican capital, was still greater. Torquemada estimates the number in the empire of Montezuma at forty thousand! Bernal Diaz, the old Spanish historian of the times, and Cortez himself in his letters to Charles V, have given us full descriptions of the striking religious edifices and ceremonials with which they came into contact.

Plentiful distribution of such structures in Cholula.



AZTEC STRUCTURE—ARCH OF LAS MONJAS.

Perhaps the most elaborate structure in all Mexico at the beginning of the sixteenth century was that which Cortez describes from the capital. It was in the center of the ancient city. The inclosure of the outer walls was so great that Cortez estimates the interior capacity as sufficient for five hundred houses. Another estimate made by Solis is that the space inside of the walls and between them and the pyramidal foundation in the center was sufficient to accommodate ten thousand dancers on days of solemn ceremonies. This whole space was paved with dressed stone, and so smooth was the work that as Bernal Diaz declares, "the horses of the Spaniards could not walk upon it for slipping." All the area within was sacred territory. It was the central institution of the state, religiously, educationally,

Particular features of the Aztec temples of Mexico.

and politically. Here the priests had their abode. Here the soothsayers and scribes of the ancient epoch congregated; and here the emperor himself was admitted only with a ceremonial. The terraces constituting the pyramid were five in number. The broadest platform was three hundred feet square, and the height of the whole to the upper terrace was a hundred and twenty feet. On the top were two shrines, or towers, which were dedicated to the gods of preservation and destruction.

Central America, as well as Mexico and the countries of the North, abounds in ruins and monumental evidences of primitive peoples. The style of building was here the same as on the Mexican plateau, but there is a greater display of art. The Central American pyramids are generally smaller than the Mexican structures, but the temples on the upper terraces were larger in proportion. Great massiveness and strength are the characteristics of the masonry. The exterior of the temples were stuccoed and covered with carved figures and ornaments. It appears that the symbolical imagination ran rampant among the priests and architects. Within the temples were corridors and chambers with arched roofs of stone.

Central American ruins; likeness to those of the East.

The antiquary in examining these ruins can but be impressed with their striking analogy to the earliest monuments of the human race in the valleys of Western Asia. The corridors and walls of the inner chambers are covered with sculptures and hieroglyphics. It is not impossible that a truer understanding of the significance of these inscriptions may make the world better acquainted with the character and activities of the aboriginal races of our continent.

CENTRAL AMERICAN ANTIQUITIES—DOUBLE-HEADED FIGURE OF THE CASA DEL GOBERNADOR.

In Honduras, also, many monuments of the same nature have been discovered and described. Here, too, the carving is elaborate and elegant. At Copan one of the most striking monolithic effigies ever recovered from the ancient world has been found and preserved. Around the shores of lake

Monumental remains of Honduras and Colombia.

Nicaragua abundant evidences of extinct peoples are scattered, and wherever these occur they are found to be covered with inscriptions. It is believed that those in the vicinity of Copan are the oldest monuments that have yet been found south of the Rio Grande del Norte. In Colombia, also, the traveler ever and anon stumbles upon some relic of human workmanship of unknown origin. The ruins of a few edifices and monuments have also been examined in this land, but have not added materially to our knowledge of their builders.

SCULPTURE OF THE TOLTECS—FROM THE RUINS OF COPAN.

Passing southward into the highlands of Peru, we come upon additional evidences of the activity and genius of an extinct people. Perhaps the city of Cuzco affords one of the best fields for antiquarian research that may be found in the world. Hererra declares that there were aforetime in this city as many as three hundred temples, and from the nature and extent of the ruins the assertion seems to be well grounded.

Temples of Cuzco; sun worship of the prehistoric races.

As a general fact, it appears that the religious ceremonies of the peoples whom we are here considering—Mexican, Central American, Peruvian—were a form of that sun worship which has constituted the most rational idolatry of the human race. Nearly all the temples seem to have been built with respect to the sunrise; and in so far as the ceremonial of these ancient peoples has been recovered, it reveals the same features which belonged originally to the worship of the Chaldæans and Assyrians, primarily to the Zoroastrians of the Iranian plateau, and in a considerable degree to the primitive peoples of India. There can be no doubt that the rising sun, coming up majestically after the red dawn of day and ascending the eastern arch of heaven, triumphing over mist and shadow, and fleecy cloud and rainstorm, constituted the one tremendous object of adoration which impressed itself upon the imagination of the early races of men.

It must not be understood that the ruined monuments which we are here considering are the only memorials left

by the Southern races of the New World. The outlines of great cities are discoverable here and there. Some of these have survived to within the historical period. Others have gone down to indiscriminate dust. In connection with these ruins the outlines of public works are found in many parts. Not infrequently the antiquary is able to trace the course of a great aqueduct or of some other evidence of the labor and skill of a prehistoric people endeavoring to supply its common wants.

Sad estate of the people in prehistoric America.

It appears clear from an examination of all that we are able to discover in the regions here named, that man himself in his primitive estate was as much subordinated to ecclesiastical domination and political despotism as in the better-known countries of the East. It appears that the common lot was as hard and ignoble in Mexico and Central America, in Colombia and Peru, as on the Babylonian plain or in the stone quarries of Egypt. Even as late as the times of the Spanish invasion the condition of the common people was pitiable in the last degree. The life of the individual man had no splendor or renown. Cortez and the Spanish story-tellers who accompanied him on his expedition speak of the miserable houses in which the people lived. They were mere huts built of bamboo and covered with thatch, temporary protections against a climate never severe and always inviting to outdoor methods of life. All vestiges of such lowly abodes have long since passed away. Nor are there other means of discovering the daily life of the common people whom the merciless and bloody waves of Spanish conquest totally engulfed.

If we again turn our attention to the regions north of the Rio Grande, we

CENTRAL AMERICAN STRUCTURE—CIRCULAR EDIFICE AT MAYAPAN.

shall find in Arizona one of the best fields of exploration for the relics of a prehistoric people. This is not said of the ruins which the Spaniards and their descendants left in this region after the beginning of the sixteenth century, but of prehistoric memorials found in several localities. On the Colorado plateau

Extinct cities of the Colorado plateau.

there are traces of extinct cities, reservoirs, terraces, and aqueducts. Still more notable, in the valley of the Gila are scattered the monumental vestiges of a vanished race. Along the river banks are the outlines and actual débris of stone houses and military fortifications which belonged to a people long anterior to the European conquerors who came with Cortez and his successors. There are in many places, in a sort of fastnesses which seem to have been selected with not a little care, the remains of human habitations in great numbers cut from the native ledges, and constituting a species of abodes which are in good measure without an analogue among the habitations built by men. In other

QUICHUAN ARCHITECTURE—REMAINS OF FORTRESS WALLS, AT CUZCO.

places walls of solid masonry, generally rectangular in form, may be traced; and the foundations of buildings which are thought to have been two or three stories in height are plainly discernible in many localities. It can not be doubted, indeed, that along the river Gila in past ages, as well as in many other parts of the territory of the United States, of Mexico, and of South America, a great and even flourishing prehistoric population existed, of which the only record is in the crumbling monumental remains which are left behind.

If we attempt to discriminate among the ruins of Southwestern North America, of Central America, and of Peru, and to decide what proportion of them are referable to the activities of the races inhabiting the Western continents since the New World was revealed to the European nations, and what part are the work of the prehistoric races which preceded them, we shall be likely, from the imperfect data in our possession, to fall into error and misinterpretation. Enough is known, however, to determine the general proposition that some of the monuments in question are the work of primitive peoples long anterior to the epoch of Spanish conquest.

Chronological relations of the ruins of the Southwest.

It is probable that Peru, or what was anciently Upper Peru, but is now included in the state of Bolivia, furnishes the best basis for the study of the truly prehistoric memorials in the regions which we have been considering. Since 1864, when the monuments of this country were explored and described by the American archæologist Ephraim George Squier, it has been settled that the relics of man's work in the high places of Upper Peru are traceable in their origin to a race that flourished in the country long before the era of the Incas.

The monuments in question are situated on the Andean plateau, high up in Bolivia, on the shore of lake Titicaca. The early Spanish invaders were greatly surprised at the character and extent of these remains. At the time of the invasion of Pizarro, they differed little from their aspect at the present time.

Remains on lake Titicaca; character of the region.

The region is a broad, open, arid plain. During the wet season the weather is cold, and becomes still more so as the dry season of the year approaches. No fruits or grain will grow in this vicinity. It is said that nothing edible has been produced in the region except a small variety of bitter potate. It is, perhaps, the only region in the world where great monumental remains are found in a situation wholly unproductive, and many conjectures have been advanced to explain the anomaly. It has been thought that perhaps the great people by whom the monuments which we are now to examine were created had profound superstitions or religious ceremonials which they celebrated on this almost desert plateau. It has even been suggested that the site of these monumental remains may have been determined by augury—as the site of Rome was fixed—and that superstition thus determined the place where vast structures were created against the laws and suggestions of the natural world.

The monuments in question consist of stonework and moles of earth. The stones are either rudely hewn into shape or selected and set up without dressing. The inquirer can not long have examined what is before him without discovering the analogy of the ruins to the great Druidical remains of England, and notably to Stonehenge. The stones are set erect in many places on the great terrace, but others are built into walls with the most exact workmanship. One of the most peculiar of the discoveries is that of heavy monolithic doorways. That is, large slabs of stone have been taken, and through these the temple entrances have been cut, with an arch above, while on the front, and even reverse, of the block are carved a multitude of symbolical characters. All over the plain are scattered, even for miles around, the relics of vast structures and battlements, the position of which can be plainly traced on the earth.

Stone and earthwork; the monolithic doorways.

PUEBLO STRUCTURE.—Ruins in the Valley of the Gila.

Among the monuments on this high

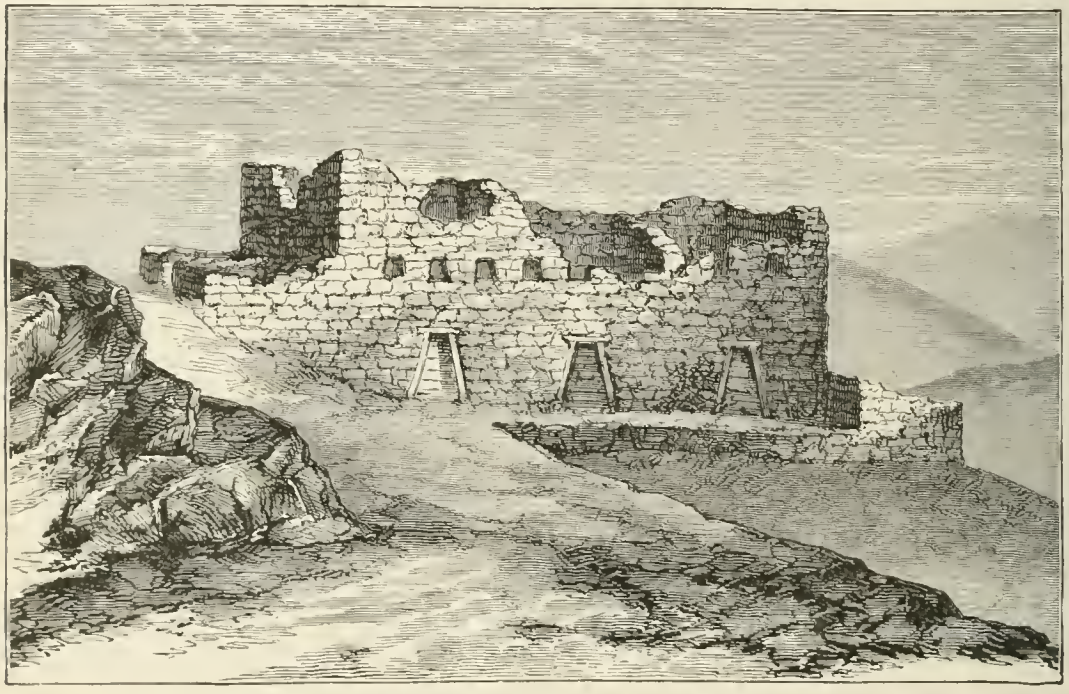
plain of the Andes four principal structures, or at least the foundations of them, have been developed from the ground. They are known to antiquaries by the names of the Fortress, the Temple, the Palace, and the Hall of Justice—from the purposes which conjecture has assigned to them respectively. The greatest of the ruins is the Fortress. It rises in the center of the

Astonishing character of the ruin called the Fortress.

substantial as that in the faces of the terrace.

If the traveler takes his stand on the summit of this tremendous monument and looks to the north, he finds at a short distance another rectangular mound, measuring at the base four hundred and forty-five by three hundred and eighty-eight feet. The outline of the structure is marked by rows of stones set erect in

Features of the Temple, the Palace, and the Hall of Justice.



OLD PERUVIAN STRUCTURE.—Ruins of Fortress, on Titicaca Island.

plain, terrace on terrace, to the height of fifty feet. The mound is rectangular, having a base measurement of six hundred and fifty feet in length and four hundred and fifty feet in width. The faces of the terraces are laid with massive stones, which are carefully and skillfully cut and dovetailed the one into the other in such a way as to make them immovable for ages and ages. On each side, running out from the base, is a vast stone platform, known in architecture as an "apron," in which the masonry is as

the earth, some of them as rude as those of Stonehenge, and others carved with skill. These are the outer supports of the structures which were reared within. Some of the monoliths are as much as fourteen feet above the earth, and are something more than two by four feet in their other dimensions. This is the structure to which antiquaries have given the name of the Temple. The Palace next attracts the attention, and is specially noted for the excellence of the stone cutting which is observed in its

foundations. No masons of ancient or of modern times have, perhaps, excelled what was done on this arid plateau before the dawn of history, and is still preserved in the foundations of the monument under consideration.

It is not far from the outer limits of the Palace, so called, that the Hall of Justice is situated. It also is rectangular in its ground plan, being four hundred and twenty feet by three hundred and seventy feet in dimensions. Within this inclosure has been developed the foundation of still another structure, called the Sanctum Sanctorum, one hundred and thirty-one by twenty-three feet in measurement, which presents the finest stonework of all. For the excellence of the cutting and fitting it may well be compared with the ruins of Baälbec. Some of the stones are twenty-five and a half feet long, fourteen feet broad, and six and a half feet in thickness. They are fitted by the best rules of geometric art, and are held in place by bronze clamps that may well be compared with the like devices found in the ruins of ancient Egypt.

In the current chapter we have done no more than glance at the monumental remains of the three Americas. It is believed, however, that the fragmentary sketches of these memorials will be sufficient to convey to the reader a fair apprehension of the times and the people in which and by whom they were created. The present volume is by no means a work devoted to antiquarian research. It is merely intended in the present book to present so much of the primitive history of mankind as shall furnish a satisfactory basis for the consideration of the great tribal migrations which are to occupy our attention hereafter. We have in the preceding chapters reviewed the conditions of aboriginal life as they have presented themselves in the caverns and wilds of Western Europe, along the shores of the Baltic, in the tumuli of Great Britain, and in the mounds and among the monuments of the New World. We shall now conclude this book with a brief sketch of the general conditions of savagery as the same are presented among the barbarous and half-barbarous races of the present time. It is believed that the prehistoric man will thus be better *realized* in his far-off career by being seen in a reflected form of activity among the savage tribes and nations of the modern world.

Purpose of this treatise and of the sketch to follow.

CHAPTER XXI.—GENERAL CONDITIONS OF SAVAGE LIFE.

A TRUE understanding of the prehistoric condition of mankind depends in good measure upon a knowledge of the manners and customs of the existing savage nations. These nations are to be looked upon as the remnants and representatives of an ancestry like themselves. Doubtless the existing tribes have been much deflected in the course of ages from the original types to which they belonged. But it is also true that they have preserved many of the leading features of the original barbarism which has prevailed in all parts of the earth.

Viewed from the animal side of exist-

ence, the barbarians of to-day hold exactly the same relation to the dead races that have preceded them as do many of the living species of animals to the extinct varieties from which they are descended. The mammoth and the mastodon and the hairy rhinoceros have their living representatives in the elephant, the Asiatic rhinoceros, and even the common swine. There has been an evolutionary descent by which the tides of life have been turned aside into new channels. The living creatures are not the same in stature, in habit, in aspect or mode of life as the extinct types from which they have been derived. But the essential nature of the original species has been, in large measure, preserved.

MAN AND WOMAN OF THE REINDEER EPOCH.
Drawn by Emile Bayard.

So also of the different varieties of men, aboriginal, intermediate, and modern. Sir John Lubbock has declared with great force that the inhabitants of Van Diemen's Land and Terra del Fuego are to the prehistoric races of the age of stone what the opossum and the sloth and the kangaroo are to the extinct marsupials, known only to the geologist. The flint weapon in the hands of a living savage is to an antiquary precisely

what the horn-crowned nose of a rhinoceros or the projecting tusks of a boar are to a naturalist. The first carries the mind back to prehistoric implements found in the peat bogs of Denmark, and the other reminds the inquirer of the hairy rhinoceros and the tremendous tusks of *Elephas primigenius*.

Relations of existing races to their barbarian ancestry.

ducible to two general considerations which are easily apprehended. The first of these is what may be called the appearance of national consciousness among a people. Whenever this happens—whenever a given tribe begins to be conscious of itself—the national tongue will for the first time find utterance, and this utterance will take the

BEGINNINGS OF METALLURGY.—A PRIMITIVE SMITHY.—Drawn by Emile Bayard.

One of the first inquiries with which we have here to deal is the fixing of a line between the prehistoric and the historic races of men. What is it to have been a truly prehistoric people? and what is it to lie distinctly within the historic era? The answers to these questions involve several matters of much importance and interest, but they are all re-

Demarkation between prehistoric and historic races.

form of narrative. The narrative may be in the form of epic poetry. It may be a half-formed anthropology or cosmology, or it may be rude annals, reciting fragments of tradition and filling up the spaces from imaginary materials. At any rate, it is *History*. It is the earliest development in the form of language of a nation's concept of itself and of its own past

History may thus be regarded as the first rational transcript of the national consciousness of a people. There is that in the mind, whether of the individual or of the tribe, which on coming into the conscious state immediately demands some kind of narrative of its own origin and previous development. When this stage in the human evolution is reached, written records appear as a concomitant and inseparable incident of that particular epoch of growth. Henceforth we have the beginnings, at least, of those annals and early chronicles and traditional forms of literature which constitute the fundamentals of formal history. This circumstance may be taken as the first great point of division between civilization and its antecedent barbarism.

The conscious man requires an explanation of the past.

The second point has already been alluded to in the preceding chapters. It is the *use of metals*. So much stress would not be laid upon this fact in the progress and development of mankind were it not for the coïncidence of the use of metals in the practical arts with the beginnings of history referred to above. It is a part of the general scheme of the civilization of mankind that this fact of the appearance and first expression of a national consciousness in the form of annals and recorded traditions shall be associated under law with the earliest discovery and application of the metals to the purposes of human life. The metallic age, if we may so express it, is coïncident with the dawn of epic poetry and the first records of legend and tradition. When the primeval man emerges from the shadows of barbarism he begins to sing and to carry a metallic battle-ax. Thus it appears that the manufacture of the metals by rational or empirical processes, and their use instead of the ruder materials employed in the age of savagery, is the second circumstance which determines the line of demarkation between the civilized forms of life and the preceding barbaric ages. In other words, the line which is drawn between the savage and unconscious state of the human race and its conscious and enlightened activities has history as one of its points of departure and the use of the metals for the other.

Use of metals coïncident with historical consciousness.

The question will at once arise whether savage nations have no traditional forms of expression. Undoubtedly they have. All tribes of men, in however low a condition of development, cultivate legend and tradition. They are fond of reciting stories about themselves and the other races with whom they have come in contact. They are even as children telling unthinkable things about wolves and bears and giants. But the point to be observed is the *impermanence of the traditions of barbarism*. Contrary to the popular apprehension, the legends and stories of really prehistoric peoples are exceedingly evanescent. They generally pass away with the current generation, or at least take a new form with the succeeding one. The absence of a record to preserve and crystallize the myths and imaginations of primeval man is the circumstance which prevents their perpetuity. Each age among barbarians has its own cycle of traditions, but they have no continuance or fixed form. All the legends of savagery combined would be no other than the babblings of the living generation, or at most the transmitted form of the babblings of their fathers and grandfathers. It is now a well-ascertained fact that the most apocryphal stories told by savages pretending to give an account of past events in which their own people have

Evanescent character of barbarian traditions.

borne a part, are only the current expression in a magnified and distorted form of things that have happened within easy reach of the memories of men.

Instances of want of race memory in savages.

Many instructive and even amusing illustrations may be given from the annals of current savagery of the valueless and short-lived character of barbarian traditions. In November of 1642 Abel Janssen Tasman discovered the island which now bears the name of Tasmania, southeast of Australia. The people passed under the dominion of the Dutch, and the vicissitude was as great as could possibly happen to a barbarian race. In 1770, a hundred and twenty-eight years after the discovery of the island, the great navigator James Cook visited the Tasmanians and acquainted himself with their traditional knowledge. He found nowhere in the island the slightest evidence of a recollection of Tasman's visit. Every trace of that great event had lapsed into oblivion. Another instance of like sort is furnished in the great inland voyage and exploration of De Soto through the gulf region of the United States. Long before the Revolution all remembrance and tradition of this event had passed from the minds of the Red men. On being questioned, the most intelligent chiefs in the region through which De Soto had passed were found to be totally ignorant of the romantic expedition which had laid their own country open to the aggressions of another race.[1]

[1] The impermanence of the traditions of savages is strongly contrasted with the persistency of tradition *after* a race has once entered the conscious stage of development. When a tribe has reached the epoch of race consciousness and has begun to employ the metals in manufacture and art, then its traditions become permanent and of high historical interest.

Transformation and early extinction of barbaric legends.

It is clear that three or four generations constitute the limit to which a knowledge of even great national catastrophes is transmitted among savage peoples. Even during the continuance of a tradition in barbarism it takes on constantly new and exaggerated forms, rendering it totally unfit for historical purposes. The imagination of the aborigines adds to and modifies the narrative until it is distorted out of all semblance to the original. It is narrated by Sir Alexander Mackenzie that during his travels among the Esquimaux they were wont to describe the English to him as giants with wings. They said that the English soldiers could kill men by looking a' them, and that one of them could swallow a whole beaver at a mouthful! The traveler Mansfield Parkyns, in his account of the traditions of the Abyssinians, relates one of their stories to the effect that some German missionaries had in the course of a few days made a tunnel from Adowa to Massowah, on the Red sea, a distance of more than a hundred and fifty miles! In fact, all of the traditions and myths of savage tribes are apocryphal in the last degree; and this fact, taken in connection with their impermanence, destroys all value that they might otherwise possess for the antiquary and historian.

While it is true that barbarous traditions are thus useless for purposes of history, and misleading if depended on to throw light upon the general conditions of savage races, it is also true that the manners and customs of these same races are among the most persistent facts which the student of human life will ever encounter. A tradition or legend will change its form like the figments of the kaleidoscope. It will vanish with a

brief lapse of time and never reäppear. But the manners of even wild and roving tribes hold their form through every vicissitude and long generations.

Persistency and integrity of customs and habits.

Nothing is better calculated to astonish the inquirer than the persistency and integrity of customs. They can hardly be destroyed. They pass through the severest crises, and come up after great catastrophes in all their pristine vigor and definiteness of outline. Even the trivial circumstance of a peculiarity of tribal speech will be perpetuated from generation to generation, and the more substantial elements of custom seem to endure forever. Habit is, if possible, more unchangeable with a tribe or people than with the individual. It seems to be a part of the blood and nerve of national existence. It goes through shocks and revolutions, through migration and famine, through the ravages of pestilence and the horrors of war, and is indeed coëxistent with the race of which it is a part. A trivial custom easily outlasts the life of man. It survives the mountain oak which has braved the storms of a millennium. It outlasts the granite obelisk which the conceit of a mistaken people has reared as the most permanent memorial of its greatness.

PERSISTENCY OF ETHNIC FEATURES.—(1) ANCIENT HEBREW SHEPHERD WITH SLING.—Drawn by H. A. Harper.

There are still present in human society forms and customs and peculiarities—modes of action and ceremonial habits—that have been transmitted to the modern world from the shadow and obscurity of the unknowable ages that lie below the daydawn of civilization; and in like manner the present will contribute to the coming ages its customs, its methods, and its ceremonials.

If we would see a striking illustration of the persistency of manners and customs, we have only to glance at some of the modern descendants of ancient nations. The Semitic race, for instance, presents us in modern times with two striking race developments. The Jews and the Arabs still stand as the typical representatives of a family of men already old at the birth of most of the ancient kingdoms. In the case of the Jews, their dispersion among other peoples has to a considerable extent conformed them in the practical affairs of life to the methods and manners of those among whom they drift, but with whom they are by no means amalgamated. So we may look to the Arabs of the present time as the living expression of those ethnic forces which were dominant in the seed of Abraham. No one who acquaints himself with Arabian manners and customs, and is at the same time conversant with the manners and customs of the Israelitish nation of antiquity, can fail to notice that the forms of life among the Arabians of to-day are identical with those of the Hebrews fifteen centuries before the Christian era. The very garments which the Arabs wear might have been stripped from the bodies of the patriarchs. Their fashion is the same, and the material and its method of manufacture are to all intents and purposes identical. The ceremonial of the house and the tent are just as they were in Canaan before the Egyptian bondage. An Arab sheik meeting another clad and mounted like himself and each followed by his retinue across the deserts and valleys of Arabia, might be photographed and the matter and the manner of the interview repeated, and both would be a faithful transcript of the meeting and compact between Lot and Abraham.

Examples of the preservation of Semitic manners.

If we descend into the particulars of speech and the manners of daily life among the Arabs we shall find the ancient ceremonial faithfully duplicated. The forms of salutation and of farewell have persisted in their integrity for more than three thousand years. The same views of life—of its origin, its nature, and its destiny—the same ideas of duty and obligation, of the nature and

PERSISTENCY OF ETHNIC FEATURES—(2) MODERN ARAB WEARING THE ABA.
Drawn by Paul Hardy.

Daily life of the Arabs a transcript of that of the Hebrews.

immediate presence of a personal deity interfering with the affairs of the common lot and directing even the details of all events, are to-day in the Arabian mind and on his tongue and in his actions with all the realism and vitality and distinctness which those same ideas possessed in the minds of the great military leaders and prophets of primitive Israel. The Elohim of the Hebrew is the Allah of the Arab. The appeal to the one for the protection of his tribe and victory over the enemy is as constant and confident in the camp of the Arabian chieftain as was the appeal to the other in the tent of Joshua or Saul.

Common religious views of modern and ancient Semites.

To the ancient Hebrew and to the modern Arab alike this Allah, this almighty personal God, directs everything. He brings pestilence, and is the giver of health. He blesses and curses according to the righteousness or the wickedness of his people. He speaks to the sleeper in dreams. The dream is only the voice of God in the darkness. Years of plenty and years of drought are both from his hand. He ripens the grain to a perfect harvest or blasts the fields with mildew. He sends the early and the latter rain when the people have been obedient, or the murrain and the locusts when they have disobeyed. All this and ten thousand other things which, taken in their entirety, constitute the tangible outer garment of Arabian life, are in manner and substance virtually the same at the present day as they were among the captives who sat down and wept by the rivers of Babylon, or among the strong soldiery who followed the banners of the Maccabees in their last struggle for independence through the wilderness of Judæa.

Were we equally well acquainted with the tribal history of other races the same phenomena — the same repetition in modern life of the manners and customs of remote antiquity— could be discovered and pointed out. Had we at the present a record of the boisterous manners and hilarious barbarism of the Teutones who hovered darkly in the forests beyond the Danube and the Rhine in the days of the early republic of Rome, we should be able to note the repetition and persistence of these customs among the Ostrogothic and Visigothic invaders who, many centuries later, devastated the empire. And were we well acquainted, as we are acquainted in part, with the primitive barbarians who inhabited the lowlands of Holland in the north, we should find their manners and customs preserved, not only in outline, but in detail and circumstance, among the broad-shouldered and florid Saxons who followed Egbert and Alfred in their battles with the Danes, and upon whose rugged nature still rests the superstructure of British greatness. The clatter of their ale-horns, the ring of their battle-axes, their barbarian laughter, and their snatches of savage song would be heard repeated in the jocular hilarity and boisterous mirth of Chaucer's bantering pilgrims, in the wild uproar and vulgarity of Shakespeare's taverns and battle-fields, and even faintly echoed through the mist and gauze of the refined and beautiful epics of the late Laureate of England.

Primitive Teutonic manners have survived to present day.

By carefully weighing the foregoing considerations we are able to see the means by which the character and methods of life of prehistoric peoples may be in some measure comprehended. The inquirer will, of course, in the first place examine all the existing remains

Monumental remains the certain evidence of prehistoric conditions.

which the peoples of antiquity have left behind. A monument, unless misjudged as to its design and character, constitutes the fundamental evidence with regard to the men who reared it. It gives the only primary testimony, and may be relied upon with absolute faith as to its verity and significance.

Monumental remains are even more certain in their testimony, more absolute in their fidelity to the facts which they represent, than are the best historical writings produced by man. The latter are always in some sense warped from the image of truth. They bear the impress of the annalist or historian from whose brain they were evolved. They are tinged with a thousand prejudices of the passing age. But the monument is unconscious. It has no prejudices or passions. It belongs to no sect or party, and is unbiased in its evidence by any personal equation. No conscious force of human caprice has been impressed upon it. It stands in naked austerity a solemn witness of the purposes and genius of the people who reared it.

PERSISTENCY OF CUSTOMS—MOURNING WOMEN OF OLD EGYPT.
From the entablature found in the tomb of Ptah-Hotep, at Thebes.

In the second place the inquirer may, as we have seen, depend in large measure upon the fidelity of manners and customs. These have been perpetuated from age to age, and there is no doubt that the earliest, even the unconscious, movements of mankind on the earth are to a considerable extent reflected and portrayed in the existing habits of barbarians. Allowance must be made for the deflection of human nature under the influences of time and circumstance. It must always be remembered that the evidence in this case is not absolute and indubitable as in the testimony deduced from monumental remains. But manners and customs are, nevertheless, trustworthy indications of the past condition of the human race. Mere tradition may not be trusted. We have seen the absurdity and brevity of the legendary part of barbarian history. Traditional forms of thought, as they are passed from tongue to tongue among the barbarous tribes of men, have an independent interest of their own, just as the fictions and extravagant imaginations of children may prove of interest to the metaphysician and philosopher. But the story told by the child must not be accepted in the court of higher reason as an evidence of its own origin or the methods of its previous life. We are thus virtually limited in our inquiry concerning the prehistoric condition of men to the two general conditions here indicated, namely, the monumental remains which are preserved on the surface of the earth as evidences of the men who produced them, and the persistency of manners and customs among the peoples now inhabiting the world.

Deductions drawn from fidelity of manners and customs.

Another consideration here presents itself and demands a brief inquiry. It is the source or primary origin of barbarity. There is no doubt that in the remotest antiquity which we are able to

discover by means of ethnic, linguistic, and archæological study, tribes of men struggled for a precarious existence on the earth in a condition of the profoundest savagery. Nor is there any doubt that similar races still possess a considerable portion of the surface of our planet, living thereon in a condition of animality which must be seen in order to be realized in its profound abasement and savage degradation. But what is the origin of this degradation? How has it happened that men have come into such relations of depravity and gloom? In what way may the degrading barbarism of the ancient world or the equally low condition of the outlying savage races of the present time be rationally accounted for and explained?

Inquiry into the primary origin of barbarism.

Two principal theories have been advanced in answer to these questions. They are diametrically opposed in the views which they present of the history of the human race. The first is the theory of the descent of mankind from a primitive high estate to the fenlands of barbarism. In this view of the case the first condition of the human family was one of elevation, of refinement, of knowledge, of power. But from this high plane of primitive purity, excellence, and greatness mankind has descended to lower and lower grades of being until, in remote antiquity where the ethnologist first discovers the primeval peoples, they wallowed in savagery and degradation. The first age was the age of gold. Then came the lapse from the noble estate with which the race was started, the swift decline of the dispersed and broken fugitives, the loss of former reason and spirituality, until the gloom of barbarism settled around all the horizon of human life, and naked savages were seen by the river banks and in the shadows of the forest.

Two explanatory theories of the source of the barbaric state.

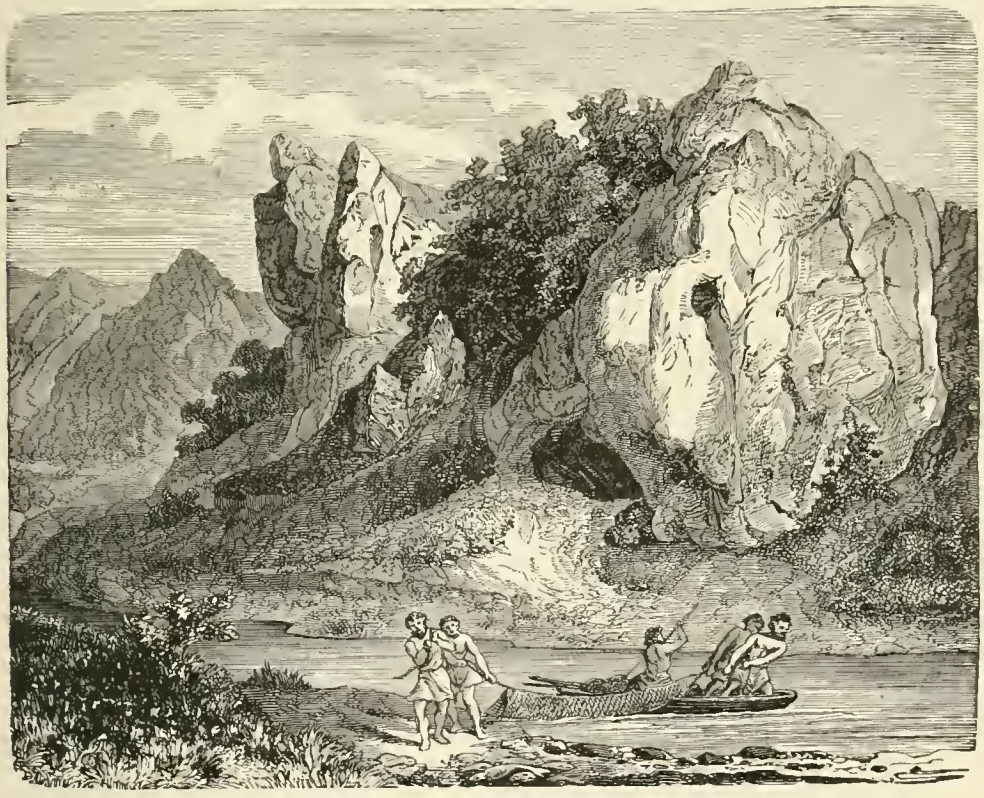
All the evidences of barbarism—so the hypothesis continues—which the historian and archæologist discover in existing and extinct races are but the results of this lapse and ruin of the human family. All the efforts which have been put forth for the elevation of mankind are only the broken and half-hopeless struggle to restore the human race to its pristine glory; and the heavy forces which impede the progress and the higher development of men are but the residual poison and malevolent habits which they have acquired, as they would acquire the infection of disease, in the course of their descent and the groveling of their low estate. Such in brief is the general view which has long prevailed relative to the origin of savagery in the human family.

Hypothesis of the descent of mankind from an age of gold.

Directly opposed to this hypothesis is the theory that the true original condition of men in the world was one of a low grade of animality, and that all subsequent movements of mankind have been along the lines of an evolution which is gradually lifting the human race through hard and tortuous processes to a higher plane. In some favored situations this evolutionary force has already, in different ages, brought certain peoples out of barbarism into the light of reason and at least the beginnings of civilization. In other places and under less favorable conditions the primitive state still abounds, and men have grown but little from the merely animal life with which they were projected into the world. All the movements of history, according to this hypothesis, have a common trend toward the production of a complete man and a perfect society.

Belief that the beginning of man-life was in savagery.

In the struggle to reach this end some peoples go to the front, others lag, and still others drop into nonentity. Some become self-conscious and display those high and generous activities which in the aggregate go by the name of civilization, and others remain on lower levels, or even in the original sloughs of barbarism. The civilized forms of life, according to this view of human history, are merely the survival and development of those better activities which have been found to be of benefit to the race.



BARBARISM ILLUSTRATED—ANCIENT FISHING SCENE.—Drawn by Riou.

It thus happens that when the ethnologist and the historian begin an examination of the past they find savagery as the bottom fact. The first discoverable men are rude hunters smiting wild beasts with weapons of stone, or half-naked fishermen dragging their nets and boats to shore on solitary coasts. The further the lines of human life are traced backward the more profoundly do they penetrate a world where reason is absent and bestiality prevails.

Elaboration of this view; arguments in its support.

Out of this primitive state the more vigorous of the savage peoples, by toilsome ascent and painful struggles, gradually emerge into conscious existence. They expand in their intellectual powers, invent superior forms of utterance and a pictorial representation of thought, write their words by means of symbols, record the story of their own deeds, mass themselves into strong communities, begin to reason about the origin of the world and the course of nature, and finally take up the chant of epic poetry. Which, then, of these two contradictory theories will better ex-

plain the existence and origin of barbarism?

Many arguments may be sincerely advanced in favor of each hypothesis. It is the duty of history to deal candidly with all questions, to have no prejudice and no fear. The time has arrived in the course of human events when the great problems of the past may be considered with calmness and courage. No blind fanaticism for one or the other of antagonistic theories should any longer sway the decision of an inquiry which is of so great an interest, and the solution of which in one way or the other can hardly change the great movement of mankind toward the higher developments and grander activities of the future. In behalf of the hypothesis of the descent of mankind from an original high estate into conditions of savagery, several facts and arguments may be truthfully advanced:

1. In the first place, the traditions of nations, especially in that part of their career when they have themselves just emerged from the barbarous condition, generally recount an original age of gold which their fathers enjoyed and in which they were the great participants. Nearly all the vigorous races of antiquity that played important parts in the ancient world had traditional beliefs of this kind. They looked back through the mists and obscurities of their own age and the ages immediately preceding to an epoch of splendor and renown in which their heroic fathers were seen afar as tall trees walking. All the early theogony and cosmogony of the ancients as depicted in their philosophical systems, their myths, their epic and dramatic poetry, were touched and flecked in every part with the traces of this belief.

Race traditions generally point to an age of gold.

It can not be well explained why the greatest peoples of the ancient world should have held and propagated such opinions respecting their ancestry and the state of society out of which they were descended, unless there had been some ground for such belief. Looked at as an abstract question, it appears more rational that the bards and myth-makers of the primitive world should have chosen to glorify themselves and the passing age by representing their descent as issuing from darkness and barbarism, rather than to picture themselves as degraded from a godlike ancestry. It is not certain in which way the half-conscious intellect of the primitive man would work or by what laws it would be guided in the development of traditional beliefs. But the fact remains that the greater part of the best teachers of antiquity *believed* themselves the offspring of a great paternity, and that back of the barbarities of their own age and the immediate ages of their fathers lay a resplendent age of gold, from whose heights and heroic activities men had descended by gradations into a low estate.

Difficulty of accounting for the prevalence of such a belief.

2. In the next place, it may be well urged that many nations within the historical era have actually declined from higher into lower conditions. In fact, all the great nations once in possession of the better parts of the world, once organized into tremendous communities, once filling the streets of magnificent cities, once directing the commerce, cultivating the arts and controlling the energies of mankind, once gathering into vast treasure-houses the resources of the world and sending forth invincible armies for the conquest of Gentiles and barbarians, have now disappeared from among the powers, and are known

Actual examples of the decline and extinction of races.

only by annals and memorials. It is also true that these great nations have, as a rule, not gone out by sudden eclipse and extinction, but they have rather fallen away by degrees, relaxed, insensibly at first and sensibly afterwards, their hold of power, and crumbled away until attack from without and feebleness from within have joined their forces to complete an inevitable downfall.

It is hardly needed to recite examples of national decay. It is almost superfluous to recount the tremendous domination once established in the valley of the Nile, now represented by Arab sheiks, miserable collections of degenerate Copts in squalid villages, and a few degraded fellahs plowing with oxen in the glebe by the river banks. The early Chaldæan empire at the mouth of the Euphrates has left only scattered monumental traces. The glory of the Assyrians and of the later Babylonians has passed forever from the valley of the two great rivers. The tremendous Turcomans, iron forgers at the first from the mines of the Altais, who came as conquerors into Western Asia, surrounded the city of Constantine and made it their capital, are now degenerated into the opium smokers and harem builders of the Bosphorus. The splendor of Athens and the glory of the Athenian intellect have

EXAMPLE OF RACE DETERIORATION—RUBBISH-BEARER OF EGYPT.
Drawn by Gustave Richter.

given way, through long ages, to foreign domination, and the traveler stands sad-hearted among the ruins of the Acropolis, or marks with astonishment the miserable goat houses built over the oracle of Delphi. The Rome of antiquity, whose solid walls of stone and tremendous legions clanking their armor on the stone slabs of the Appian Way have become only a tradition and a name, has shrunk from her ancient circuit of the hills to a commonplace city, the throne of superstition and conservatism, and haunt of beggary.

EXAMPLE OF RACE DETERIORATION—ROMAN BEGGARS.

3. The careful reader of the preceding pages will not have failed to note that many of the monumental remains of antiquity betoken unmistakably the energies and genius of a superior people. Some of the most primitive memorials of the human race are among the most convincing and substantial evidences of power and grandeur. The granite obelisks and pyramids of Egypt, the so-called Cyclopean ruins in Greece, the old Etruscan aqueducts, such as the Cloaca Maxima at Rome, the great military mounds and fortifications in North America, and particularly the Peruvian ruins on the plateau of the Andes, mark and emphasize the activities of races of

Monumental remains indicate the greatness of ancient peoples.

men hardly inferior to the strongest and most skillful known in history. It will be remembered that in many of these localities barbarism long flourished and ran rampant after the tremendous monuments reared by preceding civilized peoples had gone down to ruins. The Peruvian monuments were in their origin as far anterior to the domination of the Incas as the Incas are remote from the Peruvians of to-day. The earthworks and mounds of North America antedate the epoch of the Red men by a span of ages. The massive foundations laid by the Etruscans in their own district and in Latium are far more ancient than even the traditions of the primitive Latin race. So also are the Cyclopean remains of Greece far more remote than even the age of the heroes; and as to the monuments of Egypt, it is sufficient to say that the oldest of them are the grandest and most enduring.

4. In the fourth place, the evidence of language points to a primitive condition of mankind in which the intelligence and reason were the supreme characteristics. Whatever may have been the origin of human speech, it is clearly a rational product. The oldest languages with which we are acquainted are the most perfect in their kind. If we consider that great group which we call the Aryan, or the Indo-European, languages, we find them to improve as we trace up their descent toward their origin. This is to say that, as a rule, the older dialectical form is fuller, more complete, and more rational than its descendent derivative. The modern languages of Western Europe are, as a rule, devoid of grammatical structure, and are in reality rather the detritus of a perfect speech than the speech itself. The Anglo-Saxon tongue had a more extensive grammar, if not a fuller vocabulary, than the English of to-day. Mœsogothic was richer in inflections and rational forms than its descendent German. Latin was more inflected and developed than Gothic, and Greek preserved many of the forms which had already decayed and fallen out of Latin. Sanskrit was far more nearly perfect in its structure and inflections than any later Aryan tongue. With its eight cases and three numbers for nouns, with its full verbal development and its inflected adjectives, it stands to-day as perhaps the most complete structural expression of human thought. Thus we see that the higher we trace the streams of the Indo-European languages, the broader and fuller are the forms which we encounter. Not a trace of evidence is discoverable that any one of the multifarious languages descended from this common source had an origin in barbarian ejaculations, or in any form of irrational utterance. And if we look still more closely into some standard form of this speech we shall find that it has been evolved by the logical processes of abstraction and generalization, the noun being derived from the verb and the adjective from the noun, by an evident effort to abstract a substance or thing from an action and a quality from a substance.

Language seems to have begun in an age of reason.

It will thus be seen that many reasons may be assigned for accepting and perpetuating the old-time beliefs of the human race in the splendor of its own ancestry and the reality of the age of gold. But, on the other hand, many reasons may be given for rejecting such belief and putting in its place the hypothesis of an ascent from barbarism instead of a descent from heroes, Titans, and gods. The principal arguments in

Arguments may be advanced in support of opposing theory.

favor of the theory of savagery as the original condition of mankind may be stated as follows:

Backward look of history reaches barbaric beginnings.

1. Our first actual historical knowledge reaching into the past touches only conditions of barbarism. To the historian or ethnologist the primeval state of man, as seen from his point of view, appears to be one of savagery. It is true that many nations are discovered in the far horizon of antiquity that on our earliest acquaintance with them appear already in a state of intellectual activity and swift progress toward the civilized forms of life. But close scrutiny will discover *just behind them* a lower tribal condition, and behind that a still lower. In other words, the peoples who on our first acquaintance with them appear in a state of progress and development have, manifestly, been borne forward by evolutionary forces out of barbarian conditions only a little more remote than the peoples themselves. Such nations as the primitive Greeks were evidently resultant from an agglomeration of semicivilized tribes who, settling down from migratory habits, entered into union with each other and began to develop into rational activities. So also of the Roman gens in Latium and other parts of the Italic peninsula.

BARBARIAN LIFE ILLUSTRATED.—Chase in the Age of Bronze.—Drawn by Riou.

All this is a statement of the case as it stands in the backward vision of the historian or ethnologist. His actual acquaintance with the races of men can not well penetrate beyond the conditions of savagery *which he sees*, and ascend to a primeval of intellectual elevation and

social happiness which *he does not see*. He need not deny the existence of such a primitive state, but his discernment can not reach it through the intervening darkness.

2. Not only is the first discernible condition of mankind one of barbarism, but the evidence of an emergence therefrom is abundant. This is to say that under the eye of history early peoples, savage or half-savage in their manners, are in many instances *seen in the actual process of evolution* toward the higher form of rational existence. No condition in the primitive annals of mankind is more certainly established than the fact that peoples *do improve*. They are seen to do it. If we measure the condition of a barbarous tribe and compare it with the condition of the same people after a century or two centuries of growth, we can easily discover the process of evolution and its results.

Races are discoverable in the actual process of evolution.

It must be confessed that the improvement of barbarian races is in many cases slow-paced, scarcely noticeable after the lapse of a long period. It may even be admitted that many barbarous peoples have not improved at all. It is probably true that the original forces with which some tribes are impressed are not sufficient to bring them out of the savage state. They continue as they were from age to age. They become as fixed in their habits and methods of life as are the birds and beasts. They build as the beaver builds, and the concept of a higher state is totally wanting in their understanding. But in most instances there is a forward march—slow it may be, but still a movement that may be seen and measured.

Slow rate of race emergence from primitive savagery.

History is filled with illustrations of human development. Tribes become peoples. Peoples become states and kingdoms and nations. The expansive force of the social and civil instinct in man is seen working powerfully in the evolution of higher forms of activity and better expressions of right reason. The whole story of the human career is in good part a story of progress, amelioration, development. It is the law of life. The human race shares it in common with all other forms and modes of existence. Aye, it is most manifest in man. In him the evolution is strongest, and the tendency toward a higher state—the dream of something beyond and above—is always discernible in his actions and language. The roving tribes in ancient Hellas became the bronze-clad warriors of the heroic age. The returning warriors became the rhapsodists and orators of the age of patriotism; and the rhapsodists and orators became the philosophers and poets of the most intellectual epoch of the human race. The robbers gathered on the Capitoline Hill plant a city and organize a state. Their wolfish manners give way to the culture of the market place and the early forum. Another evolution, and we see the senate-house, the tribune, and the temple. Still another, and the marble-built city, with its marching armies and citizens in toga, its columns, its busts, its trophies, its roaring circus with its multitudes are seen — finally the domination of the world.

History replete with examples of human development.

In subject Gaul the half-savage and wholly barbarous Franks hoist their chieftain on their shields, and Clovis appears as the primitive king of a primitive people. Further on are Charlemagne and his school of the palace. Already they are reading the annals of the past, sending polite messages to Haroun-al-Rashid,

The Greek evolution paralleled with that of the Gauls.

and studying the stars. Still further on, Godfrey and Raymond and Saint Louis gather their helmeted warriors and, under an ideal enthusiasm, would rescue the tomb of the Christ from barbarians and infidels. Further on stands forth the French nation, breaking the fetters of feudalism, rising through the bloodiest of revolutions into a splendor and freedom hitherto unknown among the peoples of the earth—Napoleon the Great, his conquering armies, victory, renown, the republic.

THREE STAGES OF CIVILIZATION ILLUSTRATED—SKETCH FROM FORT LARAMIE.

In the oak woods of primeval Britain are the barbarian Saxons gathered around their chiefs. They have filled themselves with raw meats, coarse cheese, and fiery drinks, but they found their petty states — a heptarchy of possibilities. Then come Egbert and Alfred and the foundations of the immovable kingdom; the Conqueror; Chaucer; the mediæval splendor of the Plantagenets; the greater glory of Shakespeare and the bards; the establishment of liberty by war; overthrow and rebuilding; emergence; English liberty; the colonization of the world; the triumph of letters and art.

Rise of the Saxon race from barbarism to greatness.

Everywhere the story is the same. Progress and development, the first law. Foundations are laid; then comes conquest, first of savagery and then of the forces of nature—the bending down of the tremendous energies of the material world to the purposes of human will and endeavor—the mastery of the earth and its fullness. All these are the very law, the fundamental method of human existence on the earth. These facts are palpable. They are seen and touched. They are known and manifest; and in so far as they are the demonstrable rule by which mankind are guided, it appears undeniable that the history of humanity is the history of a development from a

lower into a higher form of life—from barbarism to civilization.

3. In the third place it must be acknowledged that the condition into which many civilized nations have fallen and relapsed is a condition *very different from that of primitive savagery*. It would seem that nations having once occupied a high plane of political and intellectual power do indeed lapse into effeminacy, vice, slavery, and moral degradation; but they do not become barbarous or savage. We should look in vain for a single instance in which a civilized people, whether of ancient or modern times, has fallen back into an aspect of life at all analogous to that of the cave dwellers of Europe or the Red men of North America. They do indeed relapse. The heroic Greeks of the fourth century B. C. have become the degenerate weaklings of modern Greece. The Romans of the sturdy republic have left as their descendants the mendicant musicians of Florence, the dirty boatmen of the Venetian canals, and the lazzaroni of Naples. The Spanish warriors and navigators of the fifteenth and sixteenth centuries who found a new world and took it for their sovereign, have as their living representatives the mandolin players of Cadiz and the brandishers of stilettos in the half-lighted streets of Madrid. The evidence of retrogression and decay is sufficiently striking to the philosopher and painful to the philanthropist. But the modern Greeks, the Italians, and the degenerate Spaniards of to-day have no likeness or kinship with the savage races whom we discover on the further confines of history. This is to say that the ascending and descending phases of national life present wholly diverse aspects; insomuch that one can scarcely be compared with the other. The true savage appears to have in him the potency of the time to come, while the effeminated and degraded descendant of a great ancestry has in him only the potency of death. In so far as this dissimilarity between the barbarian, under the influence of forces that may bring him into the civilized state, and the depraved posterity of great ancestry does exist as a fact, it seems to be an evidence of the original barbarity of all peoples and the evolution of a few into the higher forms of life, rather than an evidence of the relapse of races into original savagery.

The fallen estate of races differs wholly from savagery.

4. The believer in the hypothesis of an ascending movement of human nature from a primitive savage condition into light and freedom and greatness, may well urge that the great monumental remains of the remotest antiquity and the perfected languages which we find at the daydawn of civilization are the work of races which had already *passed through the stages of development* from original barbarism to the higher conditions of life. In our present state of knowledge it would be rash to allege that the striking memorials of civilization belonging to the remotest antiquity are certainly the work of peoples who had been developed from savagery through preceding ages of discipline and endeavor; but it would be equally rash to allege that such memorials of primeval greatness are the work of nations who *began* their career in civilization and enlightenment. So also of human speech. It is true that such languages as the Sanskrit appear as the highest grammatical and logical formulæ which have ever been invented for the expression of human thought, and that subsequent linguistic developments have been, so far as the structural forms of

Monuments and languages have behind them low conditions.

speech are concerned, retrogressive rather than progressive. But no one can say that the apparition of Sanskrit was not itself the result of preceding ages of progress and development.

On the whole, it appears rather against right reason than in conformity with what we know of the human mind and its principles of growth to suppose that a vast structure of speech like the Sanskrit should come forth at one effort from the brain and tongue of a perfect race. It would seem too much a marvel that the Aryan house-folk of the primitive Indian valleys should have *begun* to speak with the perfected formulæ of language. It is not alleged that such a phenomenon is impossible, but the development of a language from small beginnings and in constant correlation with the opening powers of the mind seems to conform more nearly with the progressive order of human nature and of universal nature than the sudden phenomenal efflorescence and fruitage of a full-grown language.

Not reasonable that perfected languages began at once.

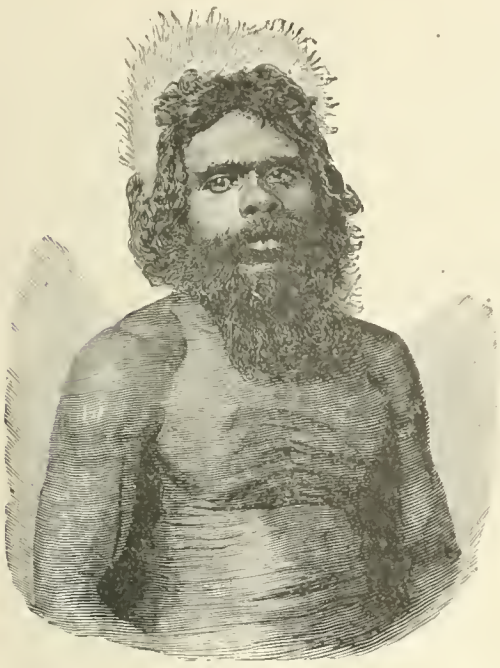
Such, then, are the principal arguments for and against the theories which have been advanced to explain the fact of barbarism. Both views of the beginnings of the barbaric life have been sustained with such hot contentions as are born of preconception. The historian may frankly admit that the arguments on either side are weighty and important, and if for the present he suspends a judgment, it will not be thought to proceed from a reluctance to decide according to the evidence before him, but rather from the incompleteness of the data thus far attainable. Meanwhile the argument strongly preponderates toward that theory which makes barbarism and savagery to have been the primitive condition of mankind, and civilization to be the resultant of the slow processes of ethnic evolution. The statement of the various reasons for and against such a view presented in the current chapter has been given as a digressive study, preparatory to a notice of some of the general and actual conditions of barbarism, and to that great topic we now turn our attention.

CHAPTER XXII.—BARBARISM ILLUSTRATED.

IT is painful to reflect how great a portion of the earth is still under the dominion of savage races. Europe, the smallest of the continents, has long emerged from her primitive condition. Large tracts of Asia have been occupied by civilized nations from a remote antiquity. A new world has within the last three centuries been reclaimed. A powerful race has planted itself in place of the scattered aborigines. South America has, within the current century at least, presented the redeeming aspect of Latin civilization. But the rest of the world is still dominated by races of men whose manners and customs lie close to original barbarity. The islands of the sea present some of the most striking aspects of this current savagery of mankind. Africa throughout nearly its whole extent is untouched with the sunshine of the higher life. The boreal regions, whether in the Old World or the New, are still occupied by races on a

Large areas of the world still dominated by barbarism.

very low plane of development. It is among such peoples that we must now seek and find our examples of existing



NATIVE AUSTRALIAN FROM THE DARLING RIVER (HEADDRESS OF FEATHERS).

forms of barbarity in illustration of the prehistoric life of man.

Filthiness of barbaric life; example of Hottentots.

One of the most striking facts in connection with the savagery of the human race is filth. There is perhaps no single example among aboriginal tribes of anything like cleanliness. Those dispositions which we observe in many birds and animals to plume and cleanse themselves and to protect their nests and lairs from the grosser forms of filth are strangely absent among the ruder savages. The historian Kolben has remarked of the Hottentots that they may be regarded as the filthiest animals in the world! Not content with the offensive accumulations of nature and constant contact with the dirt, they actually cultivate gross forms of defilement, rendering them in their personal habits repulsive and disgusting to the last degree. In his description of these heathen the author says: "Their bodies were covered with grease, their clothes were never washed, and their hair was loaded from day to day with such a quantity of soot and fat, and it gathers so much dust and other filth, which they leave to clot and harden in it, for they never cleanse it, that it looks like a crust or cap of black mortar. They wore a skin over the back, fastened in front. They carried this as long as they lived, and were buried in it when they died. Their only other garment was a square piece of skin, tied around the waist by a string, and left to hang down in front. In winter, however, they sometimes used a cap. For ornaments they wore rings of iron, copper, ivory, or leather. The latter had the advantage of serving for food in bad times."

TYPES OF SAVAGERY—BUSHMAN WOMAN AND CHILDREN.

The bath has been practiced by nearly all peoples, whether savage or civilized. But among heathen tribes the act is

BARBARISM ILLUSTRATED—THE AUSTRALIAN MANNER.—Bushmen Making Poison for their Arrows.—Drawn by Y. Pranishnikoff, from a description.

performed with little respect to personal purification. The sensuous change of temperature, from cold to warm or from warm to cold, with the mere pleasure of splashing like a porpoise in the surf, seems to constitute the barbarous idea of the bath. Instead of desiring to purify themselves from all animal taint, from defilement, from those offensive odors which are peculiar to tribes in low condition, such peoples seem to take pleasure in intensifying the disgusting peculiarities of the beast-life which they live. It requires many ages of development, as a rule, to change this horrid instinct and to substitute therefor the instinct of personal purity. It is in proof that as low in race development as the beginnings of barbarous song savages are accustomed to refer, in their rude rhapsodies, to the offensiveness of their bodies, and to rejoice in it as an element of merit and preëminence!

Savages bathe for pleasure rather than purification.

The Hottentots are also a good example of other debasing usages. The gathering, preparation, and taking of food may be cited as a second strongly discriminating feature of human life. One must needs reflect upon the vast difference in the method of refined eating and that of barbarism. The savage man eats very much after the manner of brutes. As to materials, he selects first of all native roots and wild fruits, such as yield themselves readily to his appetite, without cultivation or much search. The proportion of animal food in tropical countries is always considerably less than in higher latitudes, but the Hottentots are none the less great eaters of meat. As a rule, they take their flesh food raw. If they cook it at all they prefer a kind of broil in the blood of the animal, the whole being mixed with milk. No pains whatever are taken for cleanliness, either of the meat itself or of the utensils. Unless the meat is thus taken fresh in the blood they prefer to let it remain until it is half-putrid, regarding the odor and taste of decaying flesh as delicious. Such other victuals as they possess are boiled in leathern sacks, among heated stones. Sometimes earthen pots are used. The materials of the larder are kept in leathern bags, in the bladders of animals, or in baskets rudely constructed of rushes. Tobacco is in common use by the people, and is carried in pouches made of the skins of animals. The pipe is of stone or wood. The whole stock of provisions is borne from hut to hut, or from one camping place to another.

Filth in food supplements filth in personal habit.

Australia, on the whole, furnishes one of the most interesting and satisfactory fields in which to study the native aspects of human life. The barbarians inhabiting this island-continent when it became known to the European nations were as truly aboriginal in their character as any people with whom scientific observation has had to deal. Nor can it be said that the lapse of time since the coast regions of Australia fell under the dominion of civilization has materially changed the native inhabitants. They are to-day virtually as they were when they were first made known to the Western nations. And it is still possible to study their manners and customs without having to make allowance for the influence of other peoples upon them.

Australians an example of degraded savagery.

The Australian houses are perhaps the smallest and most insignificant which have ever been used as human abodes. They are scarcely large enough to contain a single person. They are shaped much like an inverted oven. The framework consists of a series of reeds, not

BARBARISM ILLUSTRATED—THE SOUTH AFRICAN MANNER.—THE SNAKE FEAST.—Drawn by V. Pranishnikoff.

more than an inch in diameter, bent over so as to bring the two ends to the earth, in which they are driven. The covering of the hut is of palm leaves or bark, and the protection afforded to the inhabitant is very small. One side of the hovel is open, and there is little pretense of shelter. When the inhabitant enters he must sit or lie down, as the concavity overhead is not high enough to permit him to stand. No evidences of artistic taste or adornment have been discovered in connection with these primitive habitations. Nor could such houses avail anything in a country whose climate was less mild than that of Australia. Many inhabitants go without houses at all, sleeping on the ground and making no effort to secure a local habitation of their own. In some places the effort at housebuilding proceeds only so far as setting up two or three poles and leaning against them large pieces of bark, forming a sloping roof, which furnishes a simple protection from the sun and wind.

In matters of taste and cleanliness, the Australians are but little superior to the Hottentots. Their personal appearance approaches somewhat the better type of humanity, but the daily habits of life are low down among the elements of savagery. The food of the people consists of roots and nuts, certain kinds of wood fungus, or mushroom, shellfish, frogs, snakes, worms, moths, birds, birds' eggs, turtles, dogs, kangaroos, seals, and sometimes whales. All of these things, however, or nearly all, are eaten without preparation, and are taken with no sense of cleanliness or decency. It will be seen from their list of edibles that most of the articles are such as may be grabbled from the earth or the seashore. The kangaroo is a wild, fleet animal, and is taken with considerable difficulty. The dog is only eaten under stress of hunger and necessity.

Feeding as the beasts; the whale carnival.

The whale is, of course, beyond the reach of capture to these barbarians, but he is sometimes stranded from the deep or washed up dead on the shore. When this happens bonfires are kindled as a signal, and there is a holiday for the natives. It is their great providence, which they accept with as much gratitude as they are capable of knowing. The inhabitants gather from the region about, and pounce upon the carcass with the avidity of beasts. It makes no difference in what stage of putridity the flesh may be. They gorge themselves to utter repletion. They clamber about the dead body, and quarrel for the choicer parts. Notwithstanding the heat of the climate, they stuff themselves with blubber until they are distended with the fatty mass. They eat holes into the interior, and go inside to find what they can not devour. They smear themselves with the offensive oil, and remain for days together half-suffocated around the scene of their feast. Perhaps the annals of barbarism furnish no example of bestiality more gross and revolting.

The Veddahs also exemplify the grossness of barbaric life.

It is by no means intended in this connection to give a full description of the manners and customs of the Australians or of any other barbarous nation. The whole object in this part is to illustrate the primitive life of man by a few citations from the current conditions of savagery. In another part of the work it will remain to illustrate more fully the tribal condition of the barbarous peoples lying along the outskirts of the civilized world. In further illustration of the present state of savage peoples, a few citations may be made from the life of the Veddahs, or aboriginal inhabitants

of the island of Ceylon. These people are among the rudest and most primitive of any with whom modern observers have come in contact. They are small in stature, the adult male rarely reaching the height of five feet.

With the exception of a piece of skin suspended in front of the body the Veddahs go entirely naked. Their habits are as coarse and low as those of the other barbarians whom we have been describing. They live upon the wild products of the woods and by gathering shellfish from the shore. They are in possession of axes and spears and bows and arrows. These are employed almost exclusively in the chase. The peculiar feature of the Veddah life seems to be its secretiveness, or silence. Even in the hunt they are silent, attempting to slip upon and strike their game unawares. The chase consists in a noiseless approach to the animal which the hunter wishes to take. In prosecuting this kind of capture the natives adopt several devices, the most prominent being the training of bison to the purposes of the chase. The hunter hides behind the tame animal, which is taught to feed along so near to the wild one that the hunter may spring from behind and strike it down. It is a species of stalking, almost panther-like in its method and success.

The Veddahs, like the Australians and the Hottentots, have no social or civil institutions, but one or two customs are marked for their peculiarity. They do not indulge in polygamy, each man having one wife, and the tribal code being very severe in demanding fidelity of the one to the other. The rule, however, does not exclude intermarriage in the family. Brothers and sisters may marry with impunity, subject only to the restriction that the sister must be the younger of the two. Otherwise the tribe is scandalized.

Marriage customs and domestic code of the Veddahs.

The inhabitants of the Andaman islands have been cited by some travelers as the lowest existing species of men. In some respects it is doubtless true that their habits and manner of life are of the most degraded and savage order. They build their houses by planting four rude posts, two being much lower than the others. A rude, inclined roof is thus formed of bamboo, palm leaves, and bark. This is their only structure. The people appear to live exclusively upon the wild gifts of nature and by means of the primitive chase. There is a species of wild pigs that live in the jungles, which are sometimes taken and eaten by the natives. The best piece of Andaman workmanship is the rude canoe, hollowed by means of a stone ax and fire. The people use the bow and arrow, and point their missiles with such bits of glass and iron as they are able to gather from the wrecks of vessels. Travelers have admired their skill in marksmanship, which is generally accurate to the distance of fifty yards. They take fish by means of hooks and nets and harpoons. It has been noted that they are exceedingly agile in the water, and the tradition exists that the diving native is sometimes able, by the rapidity of his action, to clutch a fish with his unaided hand.

Debased condition of the Andaman islanders

In their personal habits the Andamaners are exceedingly filthy and coarse. They smear themselves with mud, and wear no clothing. Tattooing is the common practice of the tribe, but the cicatrices exhibit less skill in design than in the case of other tribes. It is the custom of the people to dig up and

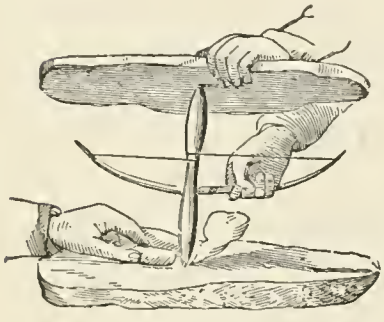
Filthiness of personal habits; uses of the dead.

BARBARISM ILLUSTRATED—THE POLYNESIAN MANNER.—Drill of Arfak Warriors.—Drawn by E. Mésplès, from a description.

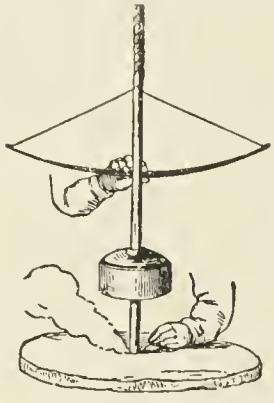
distribute the bones of the dead, the skull being reserved for the widow. This she suspends by a cord around her neck and uses as a casket for her ornaments and valuables! It is believed that these savages have not succeeded in domesticating any of the animals, though it has been noted that tame fowls are seen about their huts. For the rest, their state is one of absolute savagery.

The same may be said of the Tasmanians. Captain Cook has left a record to the effect that these people have neither houses nor clothes. Nor does it appear that they possessed canoes or implements for taking fish. They seem to subsist on mussels, cockles, and periwinkles. The bow and arrow were wanting at the time of Cook's visit to the island, the only weapon of the people being a long wooden spear.

Low estate of the Tasmanians; use and preservation of fire.



Dacota fire-drill bow.



Iroquois fire-pump drill.

MANNER OF PRODUCING FIRE.

Most of the barbarians to whom we have referred in the foregoing paragraphs are acquainted with the use and preservation of fire. The Australians understand the method of kindling materials by friction. It is of record that this knowledge does not extend to all the tribes. In some districts the fire goes out and must be relighted from the resources of a neighboring tribe. Most of the natives, especially those of Tasmania, are very careful to avoid the loss of their fire, and it is generally carried about from place to place. It has been noted that in Tasmania the duty of preserving the fire is assigned to the women, and they are held responsible for its loss.

It is not intended in this connection to discuss what may be called the moral ideas of barbarians. Indeed, it might be difficult to speak intelligently of what has little or no existence. It is still in doubt whether the barbarous peoples referred to in the preceding pages have any true concept of religion or of its duties and ceremonial. The matter is in dispute even by observant travelers who have visited these countries and familiarized themselves with the manners and customs of the people. It has been recorded that among the Australians certain dances and ceremonies are celebrated, which would seem to imply a service of religion. But this is doubtful. It is not clear that the natives of Australia, of Tasmania, and Ceylon have any notion of a Supreme Being or of a life after death. If such notions do really exist they are in such a germinal and undeveloped condition as to be little indicative of a higher nature in the people. Certain customs and obligations do exist among them, which are observed under a sense of duty; but it may be fairly alleged that no general morality or religious bond exists.

Moral ideas and religious obligation among barbarians.

If we leave the natives of these eastern waters and turn to those of the South Pacific, we find at least two principal races of barbarians. These are the Ne-

grito peoples and the so-called Polynesians. Among the most prominent of the former may be mentioned the Black inhabitants of the Fiji islands. In general, they are of darker complexion than the Polynesians, and are of larger stature and stronger frames. The features are more prominent and pronounced, and the hair is frizzled. There are, however, traces of Polynesian descent discoverable in the Fijians, especially in their language and in their manners and customs. In their use of consonants, and especially in the peculiarity of placing *m* or *n* before the consonants *b*, *d*, and *g*, the people appear to be of the same linguistic family with the African Nigritians.

Character of the Pelagian Blacks, or Sea Negroes.

The structures of the Fijians are, first of all, their dwellings. These, however, are much larger and more skillfully built than those which we have noted in Australia. They are made for the most part of the trunks of cocoa trees and ferns framed in a rectangular manner, somewhat like the log houses of pioneers in North America, but by no means so substantially built. Regular doorways are made in the sides, and the houses are as much as twenty or thirty feet in length, and sometimes fifteen feet in height. In another variety of house the posts are set up at intervals, like the framework of a like building designed by a modern carpenter, and the spaces between the posts are filled with wicker work of bamboo and palm branches. The roof is thatched with sugar cane and fern leaves; and, considering the mildness of the climate, the abode may be regarded as fairly convenient and comfortable. Hanging mats take the places of door shutters. In the middle of the floor some flat stones are laid down, which serve the purpose of a hearth. Here the fire is kept burning, and such rude cooking is done as is known to the people.

Buildings and furnishings of the Fijians.

The Fijians surpass most other native islanders in the building and management of boats. They build their canoes with considerable skill, and have small masts and sails. The framing of the bottom is strongly done, and the joints are calked and filled with a kind of gum prepared from the bread-fruit tree. When the islands were first known to White men stone tools were universally employed, but these have given place in part to the employment of iron. Native materials are still used in the fabrication of goods and in such rude arts as are cultivated in the islands. The natives have been observed in the work of carving and engraving, using for their tools the teeth of rats and mice. They have a way of preparing knives from the outside layer of the bamboo, which is exceedingly hard and close. After the blade of the implement has been cut into shape, it is charred and then brought to an edge so fine and strong that the instrument can be used in surgery. The Fijians understand the art of pottery, but are unacquainted with the use of the wheel. Their earthen vessels are manufactured by mere handicraft, flat stones and slips of wood being used by the women in bringing the vessels into shape. This work is so skillfully done as to resemble the product of the turning wheel, and it sometimes requires careful observation to decide whether the vessel has been actually turned or wrought by hand. The other tablewares of the Fijians are somewhat superior to those in common use among barbarians. Forks are employed in taking food, and other usages in-

Making and management of boats; tools and pottery.

dicate at least the beginnings of refinement.

Open and astounding cannibalism of the Fijians.

The cannibalism of these islanders is proverbial the world over. The eating of human flesh was until recent times the universal practice. It was done as a matter of course, and without the slightest repugnance or disgust. It was the custom, first of all, to eat the bodies of the enemy slain or taken in battle. Those recently killed were preferred, but it was not against usage to eat the bodies of those who had been dead for a considerable period. Young people, especially girls, were chosen for the feast. The preliminary murder was no more regarded than the slaughter of a fowl among civilized peoples. Any one might kill and eat his own women. It is in evidence that the Fijian looked upon his living companions with constant regard to their edibility. It was the custom of those who expected to feast upon young women and boys to speak of the lusciousness of their intended victims. It has been declared, with probable truth, that the Fijians have no word in their language to denote a human body except such as convey the notion of food. One of the common descriptive epithets of human flesh is *puaka balava*, which signifies "long pig!" it is impossible to convey an impression sufficiently horrifying of the cannibalism of these people and its attendant degradation.

BARBARISM ILLUSTRATED.—Fijian in a Banana Grove.—Drawn by Thiriat, from a photograph.

The manner of life among the Red barbarians of North America is sufficiently well known, at least to readers in our own country. The investigations of Schoolcraft and Morgan and a score of other distinguished and painstaking writers have revealed to the American people, in an imperishable record, the customs, beliefs, and habits of those peculiar tribes of the woods who preceded the White race on this continent. It is not needed, therefore, in this connection to make any extended citations from the manners and customs of our Indian races in illustration of the probable methods of antiquity. In the case of the Esquimaux, however, the matter is different. The latter are perhaps the most widely disseminated race of barbarians on the earth. They belong on the shores of the arctic oceans, stretching all the way around from Siberia to Greenland and from Greenland to Siberia. By race affinity they are allied to the North American Indians, but it is also clear from their physiognomy and other ethnic traits that they have a kinship to the Chinese and the Tartars.

Barbarism illustrated from native races of America.

It may be of interest, in passing, to note the fact that in several other instances in ethnic history we have the same contradictory evidence in regard to race descent. The Innuit language has unmistakably the same radical structure, and to some extent the same vocabulary, with that of the Red men of North America. But the stature, the form, the features of the Esquimaux, especially the physiognomy about the eyes and the structure of the skull, are clearly derivable from a common source with the Tartars. The manner of life,

Race features of our aborigines denote Asiatic origin.

BARBARISM ILLUSTRATED.—Esquimau Huts at Etah.—Drawn by A. de Neuville.

BARBARISM ILLUSTRATED—THE NORTH AMERICAN MANNER.—The Ghost Dance.—Drawn by J. Steeple Davis.

moreover, of the Esquimau nations is as much in affinity with the customs and usages of Northern Asia as with the tribal habits of the New World.[1]

Living as they do in the most frigid regions of our planet, the Esquimau barbarians are obliged to defend themselves from the rigor of the climate. The three great elements of such defense against the hardships of nature are, of course, food, clothing, and shelter. The vicissitude of this region of the earth makes it desirable for the inhabitant to have one manner of life for the summer and another for the winter. It is in a large measure the difference between day and night—between extreme rigor of cold and a comparatively temperate climate. Two kinds of houses are therefore necessary, the one for the mild and the other for the severe aspect of nature.

Summer and winter aspect of Esquimau barbarism.

The Esquimaux are, perhaps, the greatest eaters in the world, and their food is almost exclusively of fish and flesh. The reindeer, the musk ox, the walrus, the seal, land and water fowl, and salmon constitute the principal varieties of living creatures upon which they prey. But there is scarcely any kind of animal, whether marine or dry land, that they do not use for food. The fatty portions, heavy in carbonaceous materials, are greatly preferred. As to the bones of animals, the Esquimaux have the exact method of antiquity: they split them or burst them open by pounding with stones, and take the marrow as the greatest delicacy.

Omnivorous habit and gluttony of the Esquimaux.

In the manufacture of their utensils the Esquimaux have considerable ingenuity. The methods employed are nearly identical with those which we have already described as peculiar to the age of stone. Arrowheads and spearpoints are produced by spalling off flakes from blocks of flint. This is not done, however, by percussion, but by pressure. The block is set in rest and pressed with a beam of wood until it splits, flinging off a flake. Iron and bone are considerably employed for pointing arrows, spears, and harpoons. The method of making and rigging the bow is nearly identical with that of the North American Indians. The arrows are short, and the flight of the shaft is made steady by an arrangement of feathers. It has been noted, however, that the Esquimaux are by no means so expert in the use of the bow and arrow as the primitive Red men of our own country. The heads of arrows and spears are frequently barbed. The most formidable of the Esquimau weapons is the harpoon, the point being fixed to a rather heavy shaft of wood and secured by means of a line.

Skill in the manufacture of implements and utensils.

When the hunters attack a whale it is customary to affix bladders to the ends of

[1] The reader need not be especially surprised at the fact of a race descent from one source and a linguistic descent from another. Such phenomena have actually occurred in the clear light of day and under the open eye of history. The Northmen who came down in a horde, in their pirate ships, from Scandinavia, under the leadership of Rolph the Ganger, in the ninth century, and who possessed themselves of the fairest portion of France and founded in Neustria a dominion which has projected itself far and powerfully into the modern world, spoke a language as certainly Teutonic, or Norse, as they were themselves of that descent. But within a hundred years after their settlement in the South, that speech had strangely given way to another which they had absorbed from the subject peasantry of Normandy, and which became ever afterwards the vernacular of the conquering race. So that when William the Bastard came with his barons into England and planted there the Norman dynasty, he brought with him a race descent from the shores of the Baltic and a linguistic utterance derived from the softened dialects of the Southern Romance.

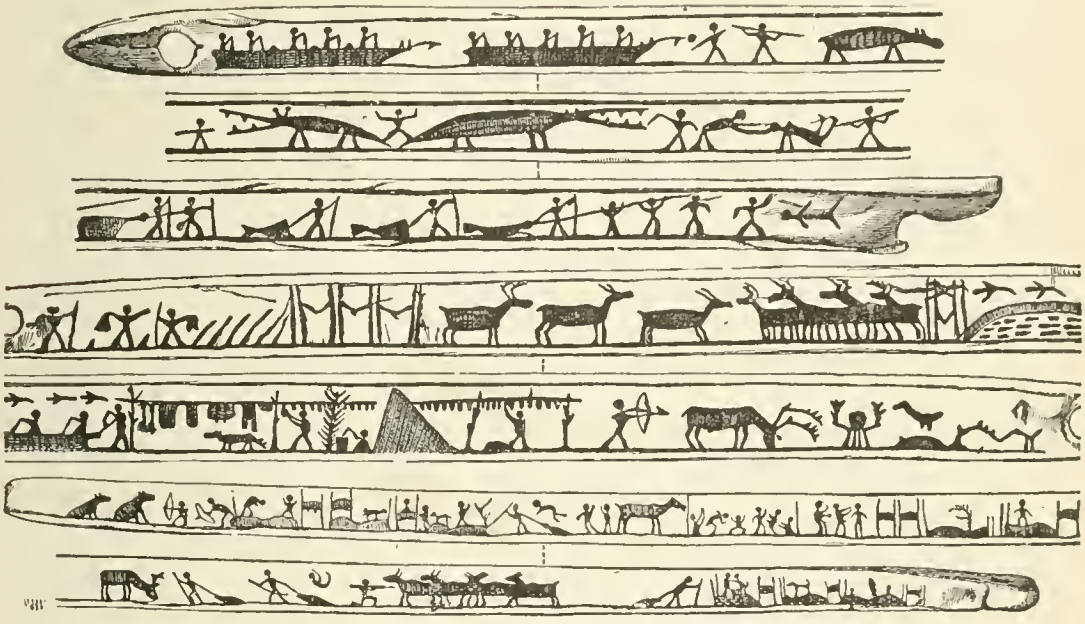
BARBARISM ILLUSTRATED—THE SOUTH AMERICAN MANNER.—Extermination of the Crevaux Mission.—Drawn by Riou, from a description.

the harpoon lines so that the position of the wounded animal may be seen at a distance and his course through the water impeded. The same plan is used in the less exciting and dangerous hunt of the seal. In harpooning their game the weapon is so arranged that the head, or barb, generally loosens itself from the shaft and is retained by the line which holds the bladder at the other end. In seal hunting, it is the plan of the hunter to watch carefully for the reäppearance of the harpooned animal and to strike it instantly on its emergence at the surface. The Esquimaux are not without skill in pursuing the dry land animals. They stalk the reindeer with considerable success, and are able to deceive many animals by imitating their cry or call.

Manner of harpooning the whale and the seal.

It may be noted that the Esquimaux have in their character and customs the rudiments of an ideal life. This is manifest in at least two particulars. In the first place, they have some appreciation of music. They sing a sort of monotonous songs, in both solo and chorus, accompanying themselves with drums and other rude instruments. The choral effect of this alleged music is not unpleasant to the trained ear of civilized travelers. Nor does it appear that the Esquimau songs are intended for ceremonial or for exciting the passions of the chase and war. It is amusement, or entertainment, properly so called, and therefore falls in the same category with the music of civilized peoples.

Songs and musical instruments; amusement the motive.



ART WORK OF BARBARIANS.

But a still more remarkable evidence of ideality among the Esquimaux is found in their disposition to draw and sketch. The taste for this kind of work among them amounts almost to a passion. They have a real talent for depicting the outlines of natural objects. This extends to a considerable degree of skill in the production of maps. The people have a fairly accurate knowledge of the topography of the neighborhood

Taste of the race in sketching and map-making.

BARBARISM ILLUSTRATED—THE ESQUIMAU MANNER.—Sledge and Dog Train.—Drawn by A. de Neuville, after a sketch of Dr. Hayes.

and country in which they dwell. Travelers in the arctic regions have frequently drawn upon the natives in the work of sketching the coasts and physical features of the country. In many instances the natives have produced maps for their visitors which have proved in application to be more accurate than could have been expected at the hands of barbarians.

Still more striking is their skill in the work of drawing proper. Nearly all the Esquimau ornaments and utensils are decorated with the outlines of men and birds and beasts. The tusks of walruses and the fossil ivory, which is frequently obtained, are covered with such sketching, and no little degree of skill is displayed in the work. The Esquimau's fancy takes up the scenes and incidents of daily life, the little dramas of the hut and seashore, the hazards of the chase or of fishing, and even the farcical happenings of their barbarous society, and depicts the same, with no little humor, on the surface of their drawing materials. It is probably true that no other people, ancient or modern, with whom the ethnologist and historian have acquaintance have exhibited in a corresponding stage of development so much aptitude and skill in the pictorial representation of natural objects.

Drawing on bone and ivory; subjects of art work.

Otherwise the Esquimaux have little intellectual force and no attainments. It is surprising to the traveler to observe their labored efforts in attempting to grasp general ideas. They have no mathematical ability whatever. Their minds in respect to number and permutation are as weak as those of children. They are rarely able to count as much as ten, and beyond this they are unable to go. They have large families, which in the northern regions are a blessing rather than a discomfort. It has been observed that the man of the hut can rarely tell the number of his children. He will attempt to enumerate them on his fingers, will fail, and the matter will result in an animated dispute between himself and his wife! The perceptions properly so called are in a better state of development than the judgment. Those faculties which have been brought into exercise by the conditions of the Esquimau environment have been quickened into tolerable activity. But the rest of the mind lies dormant, as in a state of absolute savagery.

Weakness of the Esquimaux in abstraction; inability to count.

The social system of these people is miserable in the last degree. They practice polygamy. The chief men particularly encumber themselves with multiple wives, and the usage attracts no comment. Polyandry is also in vogue, but is not so common as polygamy. A woman of unusual attractiveness will frequently have two or three husbands, but the common lot are content with one. The sanctity of the relation of the man and the woman is not regarded. The custom which has been noted among many savage nations of loaning to a visiting stranger the wife of the man who is visited prevails among the Esquimaux. The act is regarded as a social compliment, and any refusal to accept the same on the part of the visitor would be a gross violation of etiquette.

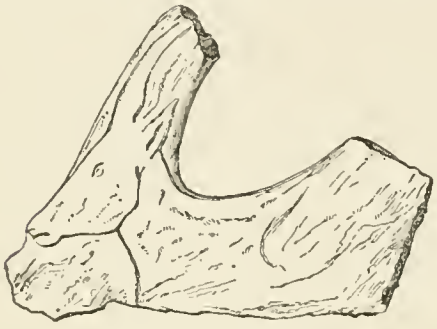
Degradations attendant upon polygamy and polyandry.

As to moral qualities, the Esquimaux have very little appreciation of duty, obligation, or dependence on a higher power. Their promise or pledge, however solemnly made, is generally worthless. It does not appear that they willfully deceive or purposely break their

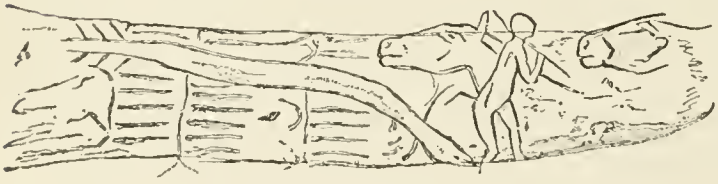
Weakness of moral nature; a rude humanity.

word. But the changing conditions of to-morrow making it of advantage to violate a pledge of to-day furnish an easy reason to the barbarian for doing so.

Of religious duty and ceremony they know but little or nothing. In their relations with one another, however, they are generally kind, humane, accommodating. The neighborly feeling prevails in the Esquimau settlements. There is much of common interest among them. The people support each other in their rude enterprises, and



Drawing of an ibex.



Group of figures.

ART WORK OF THE ESQUIMAUX—DRAWING ON BONE AND IVORY.

generosity is by no means unknown. The poorer members of the tribe are supplied in times of want. The hunter divides the results of his successful pursuit with his less successful companion. Two or three fishermen who have had the good fortune to take a walrus are by no means niggardly in distributing to others a portion of their fortune.

In one striking particular the Esquimaux rise above their contemporaries of the American forest. They are never willfully and maliciously cruel. There is, perhaps, no authentic instance on record of vindictive and preconcerted cruelty toward their fellows. The absence of this disposition among them, however, is rather in the nature of apathy than of a positive virtue. They are simply indifferent, and are incapable of cruelty or revenge because of their passionless character. They are cold in life and manners, and, though little disposed to do actual harm or to inflict pain upon their fellows, they are equally indisposed to do them positive good. Such, in brief, is the manner of life, the habit, the taste, the intellectual capacity, and general disposition of these widely disseminated barbarians of the North.

Absence of cruelty traceable to ethnic indifference.

The foregoing account of the general condition of several barbarian races is little more than a sketch of superficial aspects. There is no pretense in this connection of making a complete picture of savage life as it exists at present in various quarters of the world. That work is reserved for another part of this treatise on the Great Races. What is here presented is merely illustrative of savage manners and customs as they now prevail, and the meaning of the illustration is simply to throw light, by reflection, upon the condition of mankind in prehistoric ages. In every epoch since the appearance of human beings on the globe men have been men. Their essential characters, dispositions, and tendencies have always been the same, or at least in close analogy. The human animal has always had his own habits, peculiarities, and possibilities of development. The present state of the barbarous races, therefore, is of much value to the historian and ethnologist in

Present dissertation on barbarism no more than a sketch.

determining the primitive condition of mankind, and it is for this purpose that the foregoing imperfect sketches of several savage peoples have been presented. The current savagery of the world is exponential of that prehistoric barbarism which prevailed before the beginnings of authentic history; and, although much allowance must be made for the varying conditions of environment and instinct in the prehistoric ages and at the present time, it can not be doubted that the current aspect of barbarous life is in most respects a faithful picture of that which prevailed before the Vedas were chanted in the valley of the Indus, before Abraham took his journey from Ur of the Chaldees, before the sea-beaten Æneas and his Trojan companions had found a footing on the western coasts of Latium.

Besides the condition of absolute savagery described in the preceding paragraphs, certain secondary stages of barbarism may well be noticed. We may not say with certainty that the semibarbarity of the world is the resultant of such antecedent savagery as we have described; but no doubt such is the fact. Neither may we affirm certainly that the semibarbarous peoples are to be the progenitors of highly civilized races. It is probable that the analogy of the tree should here again be applied to the human race as a whole. Branches put out and are developed to a certain stage. Beyond this they do not expand. Presently they decay and die. Then they fall away from the vital trunk which supports the more vigorous and expansive branches above.

Place of semibarbarians in the ascending scale of races.

It will not do to say that all branches of a vital organism are equally potent in development. It is only the more central and stronger that shoot up and spread and flourish. This is probably true of the evolution of mankind considered as one organic, living thing. Possibly the present residual savagery of the world will never reach much beyond its present stage of evolution. This may be true also of the semibarbarous peoples. For the present it suffices that such peoples exist and occupy a considerable part of the earth's surface. Their manners, customs, and modes of existence differ much from those of the savages whom we have described above. They also differ much from the usages of the civilized races—most of all from the refined and cultivated peoples of Europe and America.

Philosophy of the semibarbaric estate of man.

Such types as we here contemplate may be found widely distributed throughout Northern Asia. They are of vast territorial expansion and of a comparatively low manner of life. As an example of the whole class the Tunguses of North-Central Asia may be cited. Their customs are above the horizon of savagery, but greatly below the line of civilization. What is said of their customs may be repeated of their intellectual and moral qualities. We note among them a considerable development of the mental faculties and a measure of moral obligation and duty. But these terms must be defined, not according to the standards with which we are familiar, but by a criterion fixed for the particular thing to be defined.

The Tunguses an example of North Asiatic barbarity.

The Tungusic barbarians live the wild life of hunters and fishermen. They tame the reindeer, using that animal for both food and draught. In like manner they train their dogs to draw their sledges. They live a half-sedentary life, having a rude society and the beginnings of usages that in higher

progress would be defined as civil. The domestic estate is in a corresponding stage of development. The religious life has been vaguely determined by a native faith which is called Shamanism, and by the vague outreaching influences of Lamaism from the side of the Mongolian countries, and the touch of Greek and others in the other; that is, one aspect of the Moorish life seems to approximate the conditions present in Europe and the Americas, while another aspect is distinctly barbarous.

In their commercial transactions, and indeed in all of those parts of their public life in which they are brought into

SEMIBARBARISM ILLUSTRATED—THE NORTH ASIATIC MANNER.—TUNGUSIC SORCERER.
Drawn by Victor Adam, after a sketch of the Count de Rechberg.

Catholicism out of Siberia and the West.

We may note also a grade of semibarbarity peculiar to North Africa and to some portions of Eastern and Southeastern Asia.

Semibarbarism of the Moors and Berbers.

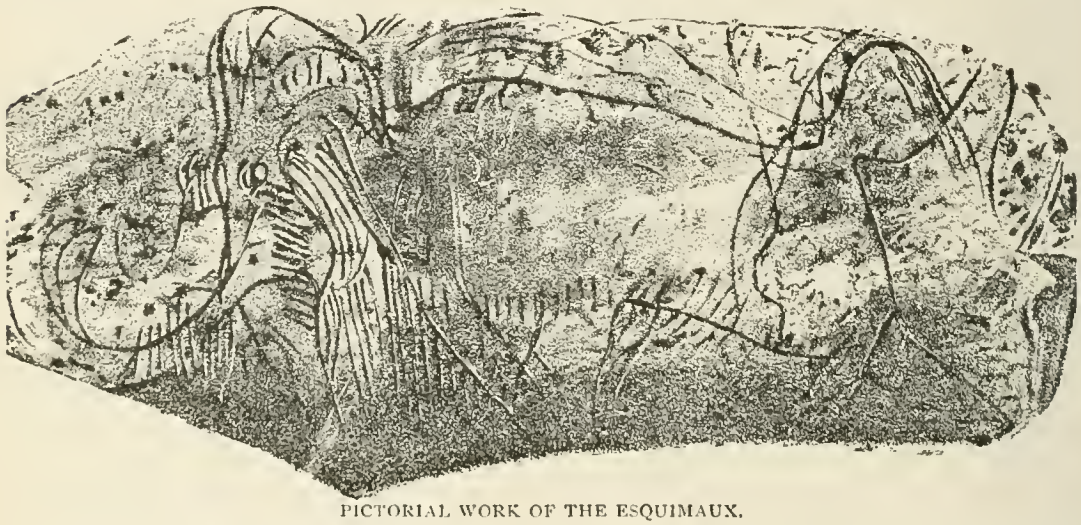
Perhaps the semibarbarous life of the Moors is the highest estate of mankind below the level of civilization. Some of the usages of the Moors and Berbers look in one direction contact with foreign nations, the Moors have the manners peculiar to the ruder forms of civilization. But in their race customs—those which they have derived from the past—they are distinctly barbaric. Their personal manners among themselves have the sense and flavor of a remote and barbaric past. Their wild dances and crude religious ceremonies ally the race with the barbarians, leaving only a small reason for

SEMIBARBARISM ILLUSTRATED—NORTH AFRICAN MANNER.—Sword Dance of the Moors.—After the painting by P. Ivanovitch, Paris, 1890.

classifying them with the civilized peoples of the world.

Several important inferences are now to be drawn from the subject-matter of the present chapter. It remains to summarize the results and to state their meaning. The reader will, doubtless, already have deduced several conclusions from his study of the preceding chapters; but it will be of additional interest to state in a few paragraphs the leading truths which follow as a logical conclusion from premises furnished by the study and comparison of prehistoric and modern barbarism.

repulsive features. What the cave men of Western Europe and the shell-mound people of the shores of the Baltic were in the post-pliocene era—when the mammoth was still a denizen of Western Europe and America, when the hairy rhinoceros and the reindeer were in the valleys of the Seine and the Loire, when the cave bear and the cave hyena and the *Bos primigenius* still maintained their existence from the northern ocean to the Pyrenees—that the native Australians, the Veddahs of Ceylon, the savages of the Andaman islands, and the Fuegians of South America are to the pres-



PICTORIAL WORK OF THE ESQUIMAUX.

1. In the first place, it will be noted that the prehistoric age and the current epoch of human history alike *furnish examples of the lowest stages of human development*. This is to say that at the two extremes of human history, the one lying below the daydawn of authentic annals and the other reaching to the very feet of the present, tribes of men are found *in similar stages* of degradation and savagery. This signifies that the whole of human history has not been sufficient to extinguish barbarism from the earth, or even to obliterate its most

All ages furnish examples of lowest human condition.

ent day. Some variations and departures of tribal character doubtless exist between the prehistoric barbarians and their fellows of the modern world. No doubt there are conditions prevalent, forces operative in the processes of our planet life which have effected changes and diversities of character between the ancient and the modern savages; but the fact remains of their characteristic and essential identity. In food and clothing, in weapons and utensils, in hut building and the rude beginnings of artisanship, in coarseness of manners and brutality of life, the two extremes of the ethnic

history of man may be brought together, and the difference might be hard to seek.

2. The life of man in the prehistoric ages and in the modern barbarian world *presents similar extremes of development*. This is to say that in the primitive world great variety is discovered in the life of tribes and peoples, and in the degree of development. In some, the evolutionary forces had already worked a considerable result at our earliest acquaintance with a given people, while in others the grossness of savagery was unabated. If we scrutinize the old house-folk of Arya or study the characteristics of some of the better peoples of Asia Minor and the West, such as the Pelasgians of Greece, or the Etruscans of Italy, we shall find them to have been vigorous and growing races, great builders of stone, makers of towns and treasure-houses and fortifications and aqueducts. But if we glance at other aspects of prehistoric humanity we find no such promising symptoms of expansion and possibility. In general, the aboriginal inhabitants of Western Europe were as low in development as may well be conceived. The cave men and the coast people were in the extreme of savagery, and it is difficult to point to a single evidence among the relics and memorials which they have left to archæology and history of even a tendency to reach a higher stage of life.

Like extremes of development present in ancient and modern times.

This same contrariety between the higher and lower aspects of human existence in the prehistoric world finds an exact analogy among modern barbarians. Here, also, we have mixed evidences of the progressive and nonprogressive disposition. Many of the existing barbarous races are as absolute in their savagery as were any of the prehistoric tribes, while others give proof of a forward movement and of actual attainment, which may well elicit hopefulness and even challenge admiration. The general principle is that the same diversity which we find evidenced among the races of the primitive world

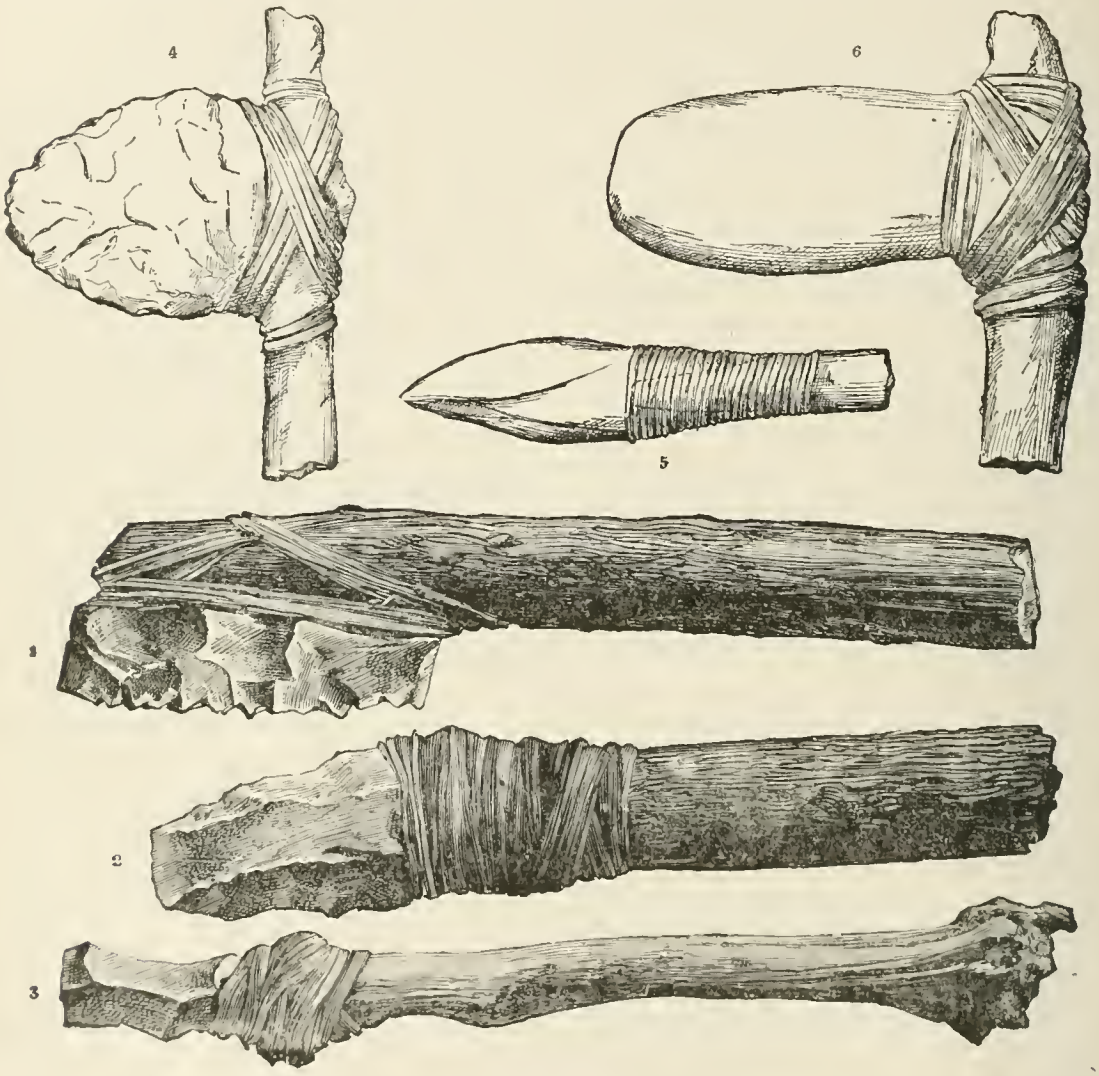
Existing barbarism both progressive and nonprogressive.

NONPROGRESSIVE STATE OF BARBARISM.—CHIPPEWAS OF SAULT SAINTE MARIE.

exist among the barbarous peoples of the present time; from which it would appear that beyond the pale and influence of the civilized nations a state of human society still exists which is little dissimilar to that which the ethnologist discov-

bution of mankind. In contemplating the barbarous races now inhabiting the outskirts of the world, we discover little or nothing to inform the judgment as to *how* savagery begins or ends, or as to

The barbaric life does not reveal its own origin or spread.



PROGRESSIVE ELEMENT IN BARBARISM—ILLUSTRATED IN WEAPONS OF NEW ZEALANDERS.
1, saw; 2, chisel; 3, knife; 4, ax of chipped flint; 5, spear of ground stone; 6, ax of polished stone.

ers on the remotest horizon of his inquiry.

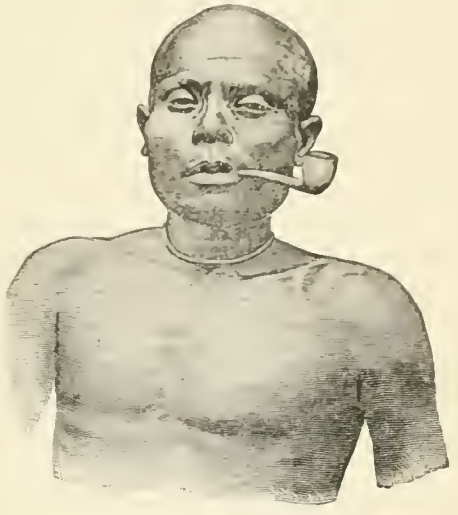
3. The study of the existing forms of barbarism throws very little light on fundamental questions relative to *the origin of savagery and the primitive distri-*

the ethnic *source* from which such peoples have descended. Their traditions, as already remarked are valueless, and their monuments and arts serve only to illustrate the passing phases of their social condition. It is possible for the

historian to see in the actions of existing barbarians those unconscious movements of man which, in some instances at least, precede the birth and early struggles of civilization. Savage tribes in such a state of development—if, indeed, they are developing at all—are in close analogy with the unconscious period in human life. There is a sense in which the species is always epitomized and expressed in the individual. What the child does without consciousness of its own actions or tendencies, that the species does in an analogous stage of development. But the evidence of the child with respect to its own past, or even with respect to its own purposes, would be little regarded by any candid inquirer. It is a period in individual or tribal life characterized by dreams and vagaries of the fancy; and it must not be forgotten that the fancy is frequently distorted by abnormal conditions and even by disease and delirium. On the whole, the impartial student of the primitive condition of mankind is able to discover as much evidence out of the memorials of the prehistoric ages relative to the origin and essential character of barbarism and the beginnings of tribal life in different quarters of the world, as he is able to discover from the closest scrutiny of the actions and manner of life of the existing barbarous peoples.

4. The chief difference between the aspect of modern barbarism and that of the primitive world is in *its geographical distribution.* The disposition of modern savagery is very different as it respects the habitable surface of the globe from that of the ancient world. In the earliest epochs accessible to our information savagery was distributed into all parts and places. It had possession of the choicest regions of the globe. There was a time when it was the central fact in Asia, in Europe, and in the two Americas. Until the present century it was still the central fact in Australia, but the growth and spread of civilization has displaced its barbaric competitor. At the first the savage state gave away in the river valleys of the East and in those choice peninsulas which drop down from the northern continents into the southern waters. In a later stage barbarism receded from the regions north of the great mountain chains. The central portions of the continents were reclaimed, and there was a recession, a retreat, of savagery toward the borders of the world.

Ancient and current barbarism differently distributed.



UNPROGRESSIVE CONDITION—MINCOPA MAN, FROM THE ANDAMAN ISLANDS.

The general result has been the extirpation of the barbarous condition in all the central and better parts of the habitable globe. It is in these best regions of the world that the great powers are planted. Here they flourish, and in proportion as they are vigorous and possess the elements of perpetuity, they extend themselves, by varying conquests, toward the horizon. Savagery

Civilization has crowded savagery out of the better parts of the world.

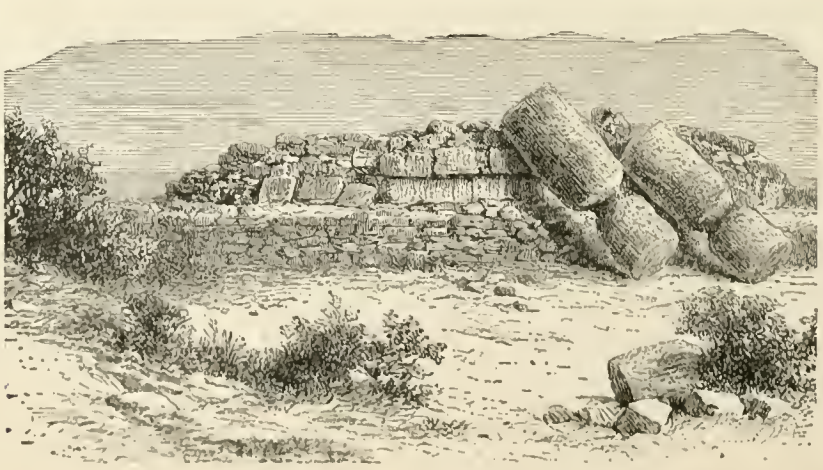
has fallen back before this movement and is now compelled to occupy the further coasts of the planet. In the far regions of the north it is still able to maintain itself, at least for a season. In parts of South America and in nearly the whole of Africa it still prevails, flourishing as it were under the ægis of a climate which seems to forbid the development of a higher civilization. As for the rest, barbarism plants itself in what will perhaps prove its last stronghold, the remote islands of the great oceans. It is easy to discover how vastly the position and relative importance of civilization and the barbaric life have been changed in their geographical place, with a constant advantage in favor of the civilized condition.

5. The principal lesson deducible from the present aspect of savagery is the emphasis which it places on *the difference between the progressive and the nonprogressive parts of the human species.* We have seen above that many forms of existing savagery are as low and unpromising as any which prevailed in the prehistoric era. The flint implement of to-day is in no wise superior to that which the cave dweller used in his battle with the extinct mammalia of Western Europe. The manners and customs of the Andamaners and the Veddahs, and the method of life of the Digger Indians in Western America are in everywise as gross and degrading as any which are suggested by the memorials and relics of the primitive world.

Difference between progressive and nonprogressive parts of human life.

It appears conclusive that a considerable part of the human race is at the present time in a condition as degraded and unprogressive as any which is suggested by our knowledge of the prehistoric races of the Old World. On the other hand, we have the fact of evolutionary progress splendidly illustrated in the history, tendencies, and prospects of the civilized races. It is apart from the present purpose to speak of the industry, the enterprise, the letters, the art, the triumph over the obdurate forces of the natural world, which have been practiced and achieved by the great peoples now holding dominion in the earth. It is sufficient to note and to emphasize the contrast which is afforded by the degraded and the elevated aspects of human life, and this contrast is brought most vividly to the mind of the inquirer as he considers the aspect of barbarism set darkly against the blazing disk of civilization.

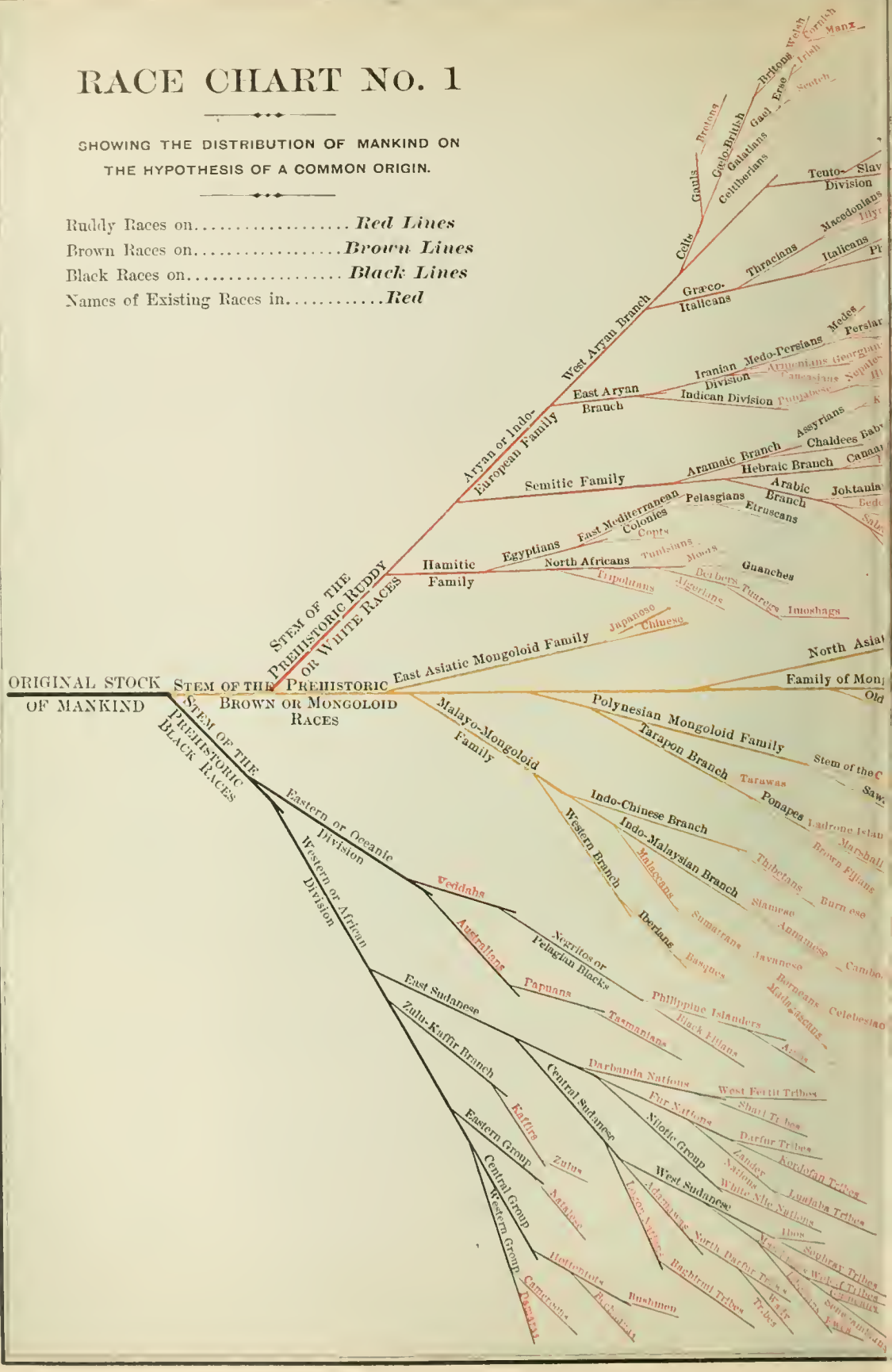
Lowest savagery still present in several parts of the globe.

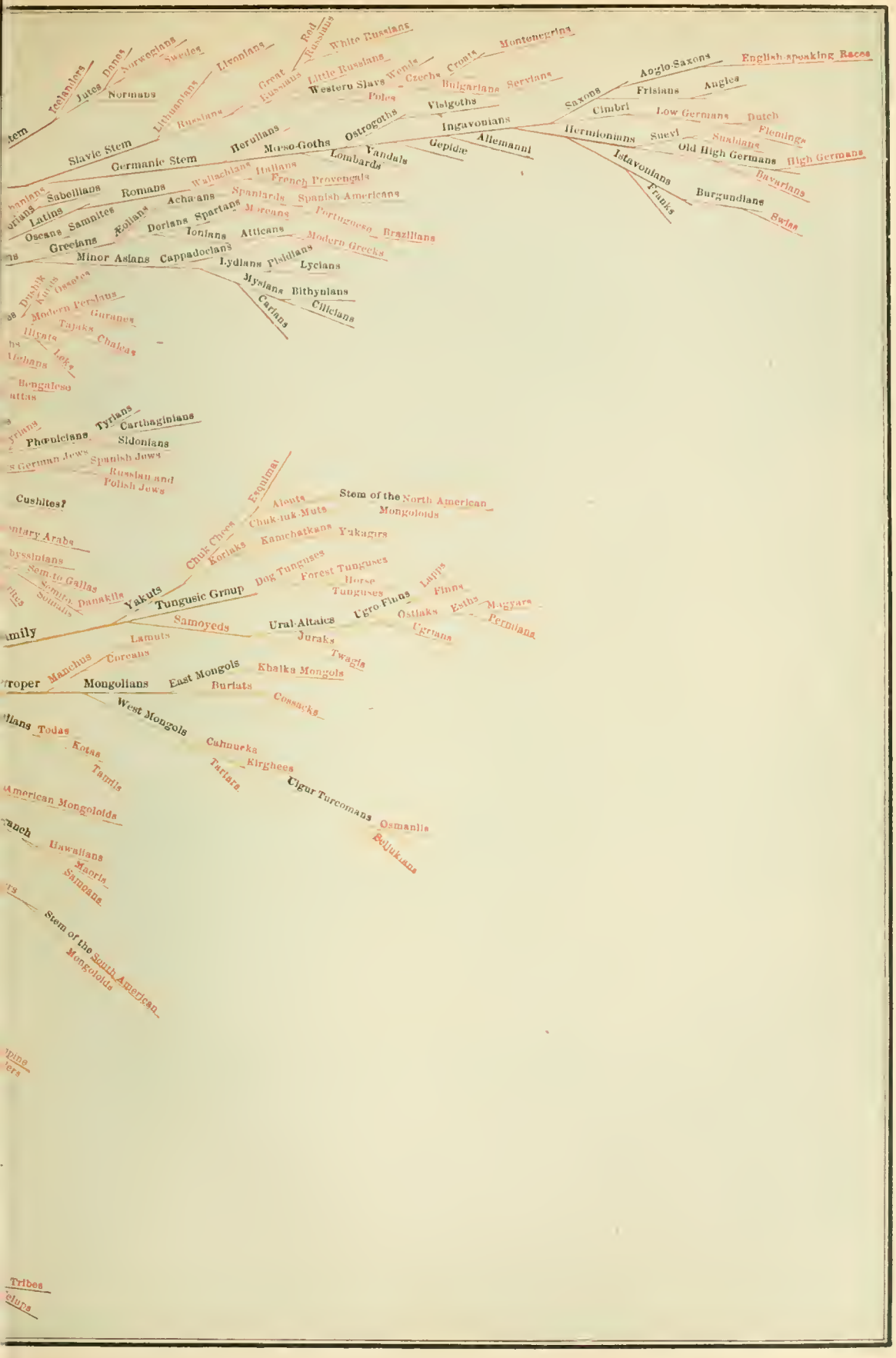


RACE CHART No. 1

SHOWING THE DISTRIBUTION OF MANKIND ON THE HYPOTHESIS OF A COMMON ORIGIN.

Ruddy Races on..... *Red Lines*
Brown Races on..... *Brown Lines*
Black Races on..... *Black Lines*
Names of Existing Races in..... *Red*





Icelanders
Jutes
Danes
Norwegians
Swedes
Normans
Lithuanians
Livonians
Russians
Great Russians
Red Russians
White Russians
Little Russians
Western Slavs
Wends
Czechs
Croats
Montenegrins
Bulgarians
Servians
Poles
Visigoths
Ingavonians
Saxons
Anglo-Saxons
English-speaking Races
Frisians
Angles
Cimbri
Low Germans
Dutch
Flemings
Hermionians
Suevi
Suabians
Old High Germans
High Germans
Bavarians
Istavonians
Franks
Burgundians
Swiss
Slavic Stem
Germanic Stem
Herulians
Mœso-Goths
Ostrogoths
Vandals
Lombards
Gepidæ
Allemanni
Wallachians
Italians
French Provençals
Sabellians
Romans
Latins
Oscans
Samnites
Æolians
Achæans
Spaniards
Spanish Americans
Moreans
Portuguese
Brazilians
Greeians
Dorians
Spartans
Ionians
Atticans
Modern Greeks
Minor Asians
Cappadocians
Lydians
Pisidians
Lycians
Mysians
Bithynians
Cilicians
Carians
Dushik
Kurds
Ossetes
Modern Persians
Guranes
Tajaks
Chaicas
Hiyats
Leks
Afghans
Bengalese
Tyrians
Carthaginians
Phœnicians
Sidonians
Spanish Jews
Russian and Polish Jews
Cushites?
Esquimal
Aleuts
Stem of the North American Mongoloids
Chuk-luk-Muts
Kamchatkans
Yukagirs
Chuk Chees
Koriaks
Dog Tunguses
Forest Tunguses
Horse Tunguses
Lapps
Finns
Ugro Finns
Ostiaks
Esths
Magyars
Permians
Ugrians
Yakuts
Tungusic Group
Samoyeds
Ural-Altaics
Juraks
Twagis
Lamuts
Coreans
Manchus
Mongolians
East Mongols
Khalka Mongols
Buriats
Cossacks
West Mongols
Todas
Kotas
Tamils
Calmucks
Kirghees
Tartars
Uigur Turcomans
Osmanlis
Beljukians
American Mongoloids
Hawaiians
Maoris
Samoans
Stem of the South American Mongoloids
Tribes

RACE CHART NO. 1.

EXPLANATION.

It is the purpose of this Chart to show THE DISTRIBUTION OF THE RACES OF MANKIND, on the theory that they have all proceeded from *a common source*. That source is indicated by the heavy black line at the left, marked "Original Stock of Mankind." From this original stock several great divisions branch off, the first of which is the stem of the prehistoric Black races; the second, the stem of the prehistoric Brown, or Mongoloid, races; and the third, the stem of the prehistoric Ruddy, or White, races. Each of these stems divides into many branches.

In general, the latitude of the given race is indicated in the Chart as on an ordinary map; that is, those races having the most northernly distribution are above; those in the temperate zones come next, as nearly as practicable; and those in the tropical regions fall in the center or lower part of the Chart.

Wherever the red lines extend, there the White, or Ruddy, races are distributed; wherever the brown lines reach, there the Brown, or Mongoloid, races are found; while the black lines indicate the distribution of the Black races.

Nearly one-fourth of the Chart at the left indicates the prehistoric, or unknown, period of race distribution. Out of this prehistoric period the various races emerge. There is an Aryan, or Indo-European, family; a Semitic family; a Hamitic family; a Mongoloid family; and sundry Black races, little known to the present day.

In the greater part of the center of the Chart, and to the right, wherever the names of races or stocks are printed in black letters, those races, or stocks, are extinct; that is, they have either ceased to exist, or are represented only in their descendants. Examples of such are the Visigoths, the Carthaginians, the Etruscans, etc.

All the names of races, families, and stocks, printed in red letters, are existing, or living, peoples. These are found, for the most part, distributed to the right at the end of race-stems. Thus we have, as examples of living races, beginning above, the Welsh, the Icelanders, the Red Russians, the Montenegrins, the English-speaking races, the High Germans, the Swiss, the Brazilians, the Esquimaux, the Magyars, the Osmanlis, etc.

The Chart enables the reader, in particular, to trace the race descent of any living variety of mankind. Thus, the English-speaking races are derived (read back from right to left) from Anglo-Saxons, Saxons, Ingavonians, Mœso-Goths, out of the German stem, of the Teuto-Slavic division, of the West Aryan branch, of the Indo-European family, of the prehistoric Ruddy, or White, races.

So, in all the cases of race-history, the Chart is intended to show, at a single survey, all of the leading developments of mankind. Many minor varieties are necessarily omitted; but all of the principal stocks of the human race are here displayed in their proper ethnical and historical development. (For the geographical distribution of the various races, see Race Charts Nos. 2 to 9, inclusive.)

BOOK IV.—DISTRIBUTION OF THE RACES.

CHAPTER XXIII.—CLASSIFICATION OF THE HUMAN SPECIES.

IT has already been remarked that migration constitutes one of the leading facts in the history of the primitive world Movement was the mood of the first men who possessed the earth. It was by means of tribal and national migrations that mankind were distributed into the various regions where they subsequently established themselves in communities and states. From certain centers the human streams arose and flowed in different directions, bearing afar the fecund waters of future national life.

Nearly all of these movements are hidden under the obscurity that clouds the beginnings of history. The very best penetration of the historian and ethnologist can reach no further than the shadowy confines of the countries and ages in which these primitive motions of the human race took their origin and expended their force. The task of delineating the migrations and dispersions of the early races may well challenge the profoundest inquiry, and the problem must even then be attempted with extreme diffidence and much distrust of the existing resources of knowledge.—It is the purpose in the present book to delineate at least the leading migrations of the early races of man.

Obscurity of the early movements of mankind.

In the nature of the case, the migratory movements of primitive mankind have left only incidental traces in history and tradition. For this reason the evidences of human distribution have to be gathered, for the most part, by indirection out of collateral branches of inquiry. As preparatory to a description of these movements, upon which all future history in some sense depended, it is necessary to frame an adequate analysis of the human family according to those distinc-

Why a classification of the races is necessary.

tions upon which the tribal and national life of one people is discriminated from that of another. It is impossible to speak intelligently of the early migrations of mankind without a division and classification of the human species, to the end that its various parts may be considered in detail and in relation the one with another. Such a classification into different races, families, and stocks is the first task imposed upon the ethnologist, and is a work in every way essential to the understanding of the beginnings of human history.

A METHOD OF MIGRATION.—Eastern Caravan.—Drawn by W. J. Morgan.

The division of the vegetable kingdom by Linnæus, and the arrangement of the animal world into genera and species and varieties by Cuvier, were not more essential to the understanding of those two great departments of nature than is an adequate classification of mankind into races, families, and types essential to a knowledge of ethnic history. Great, therefore, is the embarrassment of the inquirer to find that even to the present day this work of classifying the human race according to its true ethnic distinctions has never been satisfactorily accomplished. The principle according to which the division or divisions are to be made has never been well determined, and the problem at the present day is still to be considered in its original elements.

No adequate method of classifying yet discovered.

It can but be of interest in this connection to present in brief some of the leading methods which have been adopted in the attempted classification of the human race. The most learned of the ancients were profoundly ignorant of the affinities of the different families of mankind, and found no pleasure in tracing such relationships. On the contrary, the mental tone of antiquity was against the notion of the kinship and common descent of the nations. Each people disseminated the belief in its own priority and preëminence, and discarded as much as possible those democratic traditions which seemed to reduce themselves to a common level with barbarians and heathen. Not until long after the eclipse

The ancients believed in the diversity of the races.

of the classical ages, not until the barbarism of mediæval Europe had at length been pushed back by the revival of learning, did men attempt in a more thoughtful and philanthropic spirit to investigate the beginnings of human development and the affinities of the different peoples who inhabited the earth.

Scriptural opinions conduced to a belief in unity.

At the time of this reënlightenment of the European nations the Roman Catholic Church was dominant throughout the West. This great organization was based upon the Scriptures of the Old and New Testaments, and from these ancient books were derived, either directly or indirectly, the greater part of the learning of the Middle Ages. It came to pass, therefore, that the first rational views with regard to mankind considered as a race and the dispersion and affinity of the nations were derived from scriptural sources. It was from this origin that the prevalent opinions of several centuries were deduced, and it will, therefore, be appropriate in this connection to present, first of all, the long prevalent beliefs which were derived from the Hebrew Scriptures.

I. THE BIBLICAL ETHNOLOGY.—In the tenth chapter of Genesis we have an account of the departures and migrations of primitive mankind. The narrative begins with the descendants of Noah, the survivors of a deluge. His three sons become the progenitors of the three dominant races which go forth to people the world. The progenies of Shem, Ham, and Japheth, according to their families and tribes, are dispersed in the various countries of Western Asia, Northern Africa, and Eastern Europe.

The biblical ethnology; distribution of Shem and Ham.

In general, this account assigns to Shem and his family the Elamites, the Assyrians, "Arphaxad and Lud and Aram." According to this scheme Eber is the grandson or descendant of Arphaxad, from which we are able to see emerging dimly at least three historical peoples —the Elamites, the Assyrians, and the Hebrews. Among the sons of Ham are mentioned Cush, and Mizraim, and Phut, and Canaan, with their respective descendants. To Cush is assigned Nimrod and his historical progeny. Mizraim is doubtless the original tribal name of the Egyptians, while Canaan, whose sons are Sidon and Heth, is clearly the ancestor

CUSHITE TYPE—SHEIK OF CHAMARS.
Drawn by H. Thiriat, from a photograph by Mougal.

of the Canaanitish races of subsequent times.

The generations of Japheth are said to be Gomer and Magog and Madai and Javan and Tubal and Meshech and Tiras. To each of these is given a family of sons and descendants, and they are said to have distributed themselves among the "isles of the gentiles," "every one after his tongue, after their families, in their nations." In the case of Japheth, also, we are able to detect the

Japheth disseminated into the "isles of the gentiles."

historical beginning of nations, especially in the case of his son Madai, who is thought to have given his name to the ancient Medes. Besides what is here presented in outline, a place must be left in the ethnic scheme for the direct descendants of Noah, who is said to have lived for more than a century after the Deluge, and to have begotten sons and daughters.

Such, in a word, is the biblical scheme which the first ethnologists of modern Europe employed to account for the dispersion of the human race in the earth. It gives a fairly adequate outline of the peopling of Western and Southwestern Asia and of the countries around the eastern parts of the Mediterranean. We may even allow for the dissemination of the descendants of Noah eastward from Armenia, and thus cover a still wider area of the habitable globe. A summary, then, of the biblical schedule of the primitive peoples will give the following results:

Summary of the biblical schedule of primitive peoples.

1. *Japhethites*, with seven tribal divisions, migratory in habit, journeying to the west, and peopling the gentile lands beyond the limits of Asia.

2. *Hamites*, with four family, or tribal, divisions, three of which, at any rate, may be located, respectively, in Cush and Canaan and Egypt.

3. *Semites*, with five tribal branches, of which the Assyrians, the Elamites, the people of ancient Aram, called Aramæans, and the Hebrews, became, in their respective countries, the leading representatives.

4. *Noachites proper*, of the divisions of which the biblical narrative has given us no outline, but concerning which a rational inference of eastern migration may be drawn.

The account in Genesis indicates clearly a disposition of the Noachite families to part company and disperse into various regions. The differentiation of tribes is clearly announced as the fundamental fact in the first epoch after the traditional destruction of the Old World by water. There is thus a certain conformity in the account given in Genesis to the actual facts which we discover on the furtherest horizon of the primeval world. The jostling and division of tribes under the impulse of the migratory instinct is a fact which presents itself with equal clearness to the historian, the ethnologist, and the antiquary; and the correspondence of the primitive Hebrew narrative with this manifest tendency among the primeval families of men gives force and credibility and corroboration to both branches of the inquiry.

Value of the ethnic scheme outlined in Genesis.

Concerning the above biblical scheme of the dispersion of mankind in the primitive world, it may be fairly urged that it is hardly as ample as the facts to which it is applied. Within the limits of the peoples and countries referred to in the tenth chapter of Genesis, it appears to cover approximately the facts as they have been revealed by other methods of investigation, but it leaves many parts of the world unprovided with the populations which they are known to have possessed even before the dawn of authentic history.

Many attempts have been made to strain and exaggerate the biblical ethnology, and to compel it, by attenuation and hypothesis, to cover all parts of the habitable globe. These efforts appear to have been inspired by a zeal beyond knowledge, and to have had little success in application, except in the minds of those who had been already fixed in belief by

Points of inapplicability in the Hebrew classification.

preconceived opinions. This is to say that the attempt to derive such races as the primitive inhabitants of Western Europe—the cave men, the people of the shell mounds, and the tumuli—from some branch of the Semites, the Japhethites, or the Hamites, as those families are outlined in the tenth chapter of Genesis, would have no ground on which to rest—at least in the present state of human knowledge. In like manner, the attempted derivation of the North American Indians, of the Aztecs, of the South Pacific Islanders, of the Fuegians, of the native Australians, or of the Hottentots, from the Hebrew plan of dispersion would be equally without avail, at least with such data as are now in the possession of scholars.

The scheme of family and tribal division given in the tenth chapter of Genesis appears to the historian and ethnologist to be satisfactory *within the narrow limits of the races and countries to which it applies;* but it also appears that there are many parts of the globe which are known to have been inhabited at a time even more remote than current chronology assigns to the rise of the Noachite nations for which the plan of dispersion presented above seems to provide no likelihood or even possibility of inhabitants. How far the Hebrew scheme of dispersion and development from a Noachite origin through its three leading branches of Hamites, Semites, and Japhethites conforms to other ethnological outlines derived from different data and by means of different methods of investigation, remains to be elucidated in the following pages.

The scheme satisfactory within narrow limits.

II. HISTORICAL ETHNOLOGY. — With the progress of historical investigation during the last three or four centuries so much information has been gathered relative to the first races of men and their movements across the ancient land-

Origin and development of historical ethnology.

INDO-EUROPEAN TYPE—THE SULTAN MACOUD MIRZA.
Drawn by H. Thiriat, from a photograph by Madame Dieulafoy.

scape, that a system of ethnic classification has been advanced from a purely historical basis. It was known, or suspected, by the Romans and Greeks two thousand years ago that they were related in their descent. Later on it became known that such peoples as the Medes and Persians were of the same race-origin with the Macedonians and

the Hellenes. In still more recent times it was discovered that the Teutonic races had an ethnic affinity with the Græco-Italic family and with the Celts of Western Europe. Still more recently it became known that the Hindu races were descended, in all probability, from a common origin with the Greeks, the Romans, and the Teutonic branches of mankind. A still higher view of the whole question has led to the belief of the ultimate affinity of the Semitic nations with the great peoples mentioned above, and

Glimpses of a wide application of this method.

SEMITIC TYPE—THE ARAB BENI LAAM.
Drawn by H. Thiriat, from a photograph by Madame Dieulafoy.

of the Hamites with all the rest. As the historical horizon has widened and the vision of the observer has become clearer with the increase of knowledge, the true relations of the various families of men have been discovered to the extent of warranting a classification on the basis of actual history; and many attempts have been made to produce on this basis a scheme of ethnic dispersion as broad and comprehensive as the far-reaching facts which it is intended to explain.

As a result of this method, several races of men have been distinguished from each other and classified according to their ethnic descent and affinities.

1. *The Indo-European Race.*—It has been definitely ascertained that two of the great Asiatic families and at least four of the prevalent peoples of Europe have had a common descent from a common ancient origin. To this community of nations the name Indo-European, or Indo-Germanic, has been applied by historical writers. The term signifies the two extremes in place and time of the national dispersion from the common origin referred to. It signifies that an Indic branch of the human family, including with this term the Iranic, or Persic, division of mankind, has been derived primarily from the same fountain with the Græco-Italic race and with the Celtic and Teutonic divisions of mankind in Europe. From the common fountain, two Asiatic streams flowing to the south and the east are known to have arisen in common with the four westward flowing streams that were destined to bear into Europe and through all the west the primitive waters of Hellenic, Italic, Teutonic, and Celtic nationality. The term Indo-European is thus devised to cover the wide extremes of human development which span the world from the valley of the Indus to California.

Meaning and scope of the term "Indo-European race."

2. *The Semitic Race.*—Under this head the historians have developed a classification very nearly analogous to that embraced under the same classification in biblical ethnology. There is, historically speaking, some indistinctness on the further borders of Semitic development. Whether, for instance, the ancient Chaldees were to be included under this designation may be regarded as doubtful. It is sufficient to note that the He-

Races included under the definition of Semitic.

brew race, in its several divisions, ancient and modern, is included under the Semitic division of mankind, and constitutes, indeed, its most striking representatives. So also the more recent Arabs are included as a cognate branch of the same great family; and the ancient Aramæans prevalent in Syria, Mesopotamia, and other western districts of Asia must in like manner be classified with the Semitic division of mankind. The reader will not fail to observe that history, considered as a science, and the scriptural account of the dispersion of the human race are very nearly in accord as it respects the divisions, migrations, and historical development of the Semitic family of men.

3. *The Hamitic Race.*—This division of mankind is known to history chiefly by its greatest representatives, the ancient Egyptians. As planters of the strongest and most enduring civilization of remote antiquity, these people could but make a strong impression on the earliest historical developments of the world. Cognate with the Egyptian race were several other branches of Hamites, but nearly all of them are obscured with doubt as to their origin and classification. Such are the old Chaldæans, who planted their empire on the Lower Euphrates as much as two thousand years before our era; and such are the Joktanian Arabs of the south, bordering on the ocean, and such are several of the Canaanitish nations, with whom the greater historical peoples came into contact from the seventh to the third century B. C. Many historians have regarded the Phœnicians, the Sidonians, and the Carthaginians as of Hamitic descent, and it is highly probable that some of these peoples were at least composite in their ethnic origin. As a general fact, it appears that the Semitic and Hamitic peoples of antiquity were less completely separated from each other's influence, less perfectly differentiated into diverse types of race development, than any other two branches of the primitive family of men.

Who the Hamites were; doubts as to certain races.

HAMITIC TYPE—THE EGYPTIAN SAÏS.
Drawn by A. de Bar.

4. *The Altaian Races.*—The great nomadic peoples having the highlands of

the Altais as their original habitat have been designated by many terms, and there is yet much confusion in their attempted classification. Even the major divisions of these races are not well made out. One of the broadest divisions is the Tartar family, spreading to the north and east over a great part of Asia. It is still in dispute whether

The Altaian races; dissemination of the Tartars.

ALTAIAN TYPE—OLD TARANTCHI.
Drawn by E. Ronjat, from a photograph.

the Tartars and Mongolians should be considered as primary ethnic divisions of mankind, or whether the Mongolian branch of the south has been deflected from the Tartar group of the north. As we shall presently see, this great assemblage of semicivilized races, nomadic over the vast steppes of the north and in a low grade of development in the south, is defined by the term Turanian in the linguistic division of men. But for historical purposes the whole group may best be classified and named from its geographical center on the northern slopes of the Altais. The White Tartars, or Turcomans, as the westernmost division of the great Altaian group, have, by their aggressions in Asia Minor, Syria, and Eastern Europe, brought the family of nations to which they belong into historical relationship with the Indo-European race, and have thus preserved unto the present time at least the reminiscence of the prowess for which they were characterized in the fifteenth and sixteenth centuries.

5. *Western Aborigines.*— Besides the greater peoples with whom history has had to deal in Western Asia and Europe, the progress of nations westward has brought them into contact with new varieties of the human family, unknown in ancient times. The limited geographical knowledge of the ancient peoples shut them out from an acquaintance with the widely spread barbarian races occupying the New World, the continent of Australia, and the islands of the sea. It is not meant that the inhabitants of the vast regions here referred to are of a common ethnic descent. On the contrary, as we shall see hereafter, many original stocks of mankind are represented in the existing savagery of the world. But for historical purposes the aborigines of the West and of the ocean lands of the South and west may, for convenience, be grouped together and considered as an unclassified mass of peoples, in varying stages of evolution.

Aboriginal races of the western hemisphere.

It will be remembered that what is here attempted is merely to indicate such results in the way of classification as are afforded from a purely historical point of view; and for this purpose all

the outlying barbarous peoples that have been revealed since the beginning of geographical discovery at the close of the fifteenth century may be grouped as one, and considered as a single fact in the analysis of the human race. If, then, we collect the results derivable from this historical view of the dispersion of mankind, we shall find the foregoing five groups of peoples, the first three of which, the Indo-European, the Semitic, and the Hamitic branches, are tolerably clearly defined and separated by ethnic lines, while the remaining two, the Altaian group of nations and the Western aborigines, are banked together rather for convenience of consideration than by exact principles of classification.

Results of the method; imperfections in the scheme.

III. LINGUISTIC ETHNOLOGY.—Within the present century the study of language has thrown new light on all the disputed questions relative to the dispersion and race developments of mankind. The scientific investigation of speech has made clear many vexed questions in the primitive history of men that to all seeming could have found no other solution. The general effect has been to confirm and establish many of the views already received from tradition and historical inquiry, and to disprove and render untenable many other opinions concerning the movements and affinities of the early races. Much that was conjectural has become known as fact. Theories have been demonstrated or destroyed, and new views of the extent, variety, and true character of tribal and national evolution have been projected. In some departments of inquiry the new knowledge has amounted to a revolution. On the whole, it is almost impossible to overestimate the value of linguistic science in the exposition of all questions relative to the prehistoric conditions and movements of mankind.

In what manner language has become a basis of classification.

If we take up the results of this study of human speech as it respects the ethnic classification of the race, we find a certain general parallelism to what has been presented above as proceeding from biblical and historical investigation. To begin with, the science of

WEST ARYAN TYPE—ALCIBIADES.

language declares with emphasis and demonstrates the existence of—

1. *The Aryan Race.*—This term, as elucidated in the preceding book, relates primarily to a primitive nobility claimed and maintained by the peoples called Aryan, which nobility was based upon the agricultural life as distinguished from nomadic and pastoral pursuits. It is not needed to illustrate further in this connection the meaning and application of the term. It suffices to note the fact

The Aryan race established by linguistic processes.

that the study of language has defined and proved beyond a doubt the fundamental affinity and kinship of the Aryan folk of Asia—that is, the great Hindu family of Aryans in the valleys of India and the Iranian, or Persic, division of mankind—with the Græco-Italic race and the Teutones and Celts of Europe.

The community of the original speech of all these peoples, spreading in its widest development from the base of the Himalayas westward over the table-lands of Iran, through the southern peninsulas and the transmontane forests of Europe to the Atlantic, and through the New World to the Pacific coast, has been established by proofs irrefragable as those which determine the truths of geology or the laws of the physical world. The course of the tribal movements by which from the countries east of the Caspian these great and progressive streams of human life pursued their way to their destination can be traced by the linguistic phenomena which they left in their track, and the elimination of the great family of men to which scholars have in recent times given the name Aryan from the remaining races has been completely effected.

Race movements traceable by phenomena of language.

It can but be of interest at this point to state the linguistic facts upon which the classification of mankind has been attempted. It is found that certain peoples, like the Aryan family above defined, speak dialects of a common language. In general, they have a vocabulary and a grammar in common. When we find two peoples living in different and distant parts of the earth naming the objects of sense and reflection with the same words, and combining those words in sentences under the same laws of grammatical and logical structure, we are compelled to conclude that the two languages have had a common origin somewhere in the past; and if the languages have thus arisen from a common source, the two peoples who spoke them had also an original tribal identity. This is exactly the case with the great nations called Aryan. The six branches of this vast family of mankind, namely, the Indic, the Iranic, the Hellenic, the Italic, the Teutonic (including the Slavonic), and the Celtic, are not only identified by the laws of history, but also by the laws of speech. The Sanskrit, spoken in ancient India, the Persic dialects of the plateau of Iran, the different varieties of Greek peculiar to Hellas and the Ægean islands, the Latin tongue of the West, the various Teutonic languages, and the Celtic, with its two or three derivatives, have all a fundamental linguistic identity. Their vocabulary as it respects the primary objects of sense and the common actions of life is virtually the same in all.

What facts in language warrant ethnical conclusions.

More striking still are the fundamental peculiarities of their respective grammars. The great feature of all these tongues is *inflection*. The variations of thought as, for instance, number, gender, and case in nouns, mood and tense in verbs, comparison in adjectives and adverbs, are indicated by terminational changes in the words of the language, and these changes obey the same laws and present the same phenomena in all the speeches above referred to. Only the student of language can fully appreciate the striking similarities which present themselves in all branches of the Indo-European, or Aryan, tongues. It is as though we should study a single language with dialectical variations. And so indeed it is. The original speech of all these peo-

Inflection the prevailing feature of Aryan speech.

ples was one. Somewhere in the past and somewhere on the surface of the earth, before the era of tribal migration, a family of men had, by reason and experience, developed a language of the inflectional variety, had given names to the objects of nature and the concepts of the mind, had defined by certain words the actions and thoughts peculiar to their volitions and imaginations.

How languages are modified by environment.

The general result of this evolution was the production of a great typical speech, which was spoken by all the members of the tribe in its ancestral home. From this region the migrations began, and each band of emigrants carried with them the ancestral speech. As they entered into new relations with nature and new experiences in life, passing through belts of different climate, encountering new landscapes and familiarizing themselves with new conditions and environments, their tongues began to modify the original language, and to adapt it to the changing panorama of nature and the varying concepts of the mind. Generations went by. Different regions of the earth were reached. National developments ensued. But still the fundamental identity of the speech of all these peoples was maintained. So that in India, in Persia, in Macedonia and Greece, in Italy, in the forests of Northern Europe, and in the outlying portions of Spain and Gaul and Britain, the scholar of after times discovers the broken, but clearly identical, fragments of a common language once spoken by the ancestors of all these peoples. Thus it is that the study of language has furnished one of the surest criteria by which to determine the ethnic classification of mankind.

2. *The Semitic Race.*—Following this same clue, we discover by means of language another family of men, to which is given the name of Semitic. Here we notice the recurrence of the same term which was given us in the biblical ethnology and repeated in the historical division of the races. The linguistic inquirer finds in the East a group of nations speaking languages totally different in structure and vocabulary from the Aryan tongues above defined. The speech of the Hebrews, the old Aramæans, and the Arabs is as distinct in its essential character from Sanskrit and Greek and Latin as though it belonged to a wholly different class of phenomena. The words of the Semitic languages, instead of being of all lengths as to syllables and letters, consisted fundamentally of triliteral symbols. Every word is essentially a word of three letters and three only. These constitute the skeleton, so to speak, of the vocal symbol, and around this skeleton the vocalic elements are arranged.

Semitic races may be classified by means of their languages.

Inflection is almost unknown to the Semitic languages. The grammar of these tongues is constructed upon a totally different principle from that of the Aryan languages. Even the superficial student of human speech must be struck and astonished from the very first with the essential difference and contrast between the Semitic method of expressing thought and the method of the Aryan peoples. It is from this distinction that the linguistic inquirer has constructed the classification of the Semitic races. The Hebrews, the Aramæans, and the Arabs, with their derivatives in ancient and modern times, are grouped by themselves, and are as certainly defined by means of the languages which they speak or have spoken as they are clearly divided from the other nations in historic development.

Contrast between Semitic and Aryan methods of speech.

3. *The Turanian Races.*—The progress of linguistic science has revealed another great group of languages, differing entirely in structural character from the two varieties above described. It is found that in general the languages of the nomadic nations of Northern Asia are *monosyllabic*. They consisted originally of words of a single syllable, and are *never inflected*. In order, however, to express the necessary inflection of ideas and to effect the construction of the sentence, they adopted what is called the agglutinative method of combination. That is, several monosyllables are put in juxtaposition to express the complex or compound notion which in the Aryan languages would be denoted by means of inflectional terminations. This feature of combining monosyllables in long, compound expressions, partly resembling words and partly sentences, is common to the languages of nearly all the nomadic nations of the earth.

Peculiarities of the so-called Turanian languages.

TURANIAN TYPE—KIRGHEEZ FALCONER.
Drawn by Delort, from a photograph and description.

It is believed by scholars that such languages have not yet reached the inflectional stage of development, and that, in obedience to natural laws, they will ultimately pass into a form of structure similar to that of the Aryan vocabulary and grammar. No example of such transmutation, however, has been noted in any quarter of the world. The agglutinative languages hold fast to their original character, and the peoples who speak them prefer to retain their tedious, periphrastic methods of expression to the adoption of the briefer and more elegant inflectional forms of speech. Based on these agglutinative dialects, the ethnic classification of races has been extended to

Features of agglutinative tongues; meaning of "tura."

include the great group called Turanian. The word is derived from *tura*, "a horseman," and has respect to the national habit of life peculiar to the semibarbarous races of Northern Asia. In general, the Turanian family, as determined by the peculiarities of language, conforms with tolerable identity to the Altaian group of nations as determined by historical relationships.

4. *The Ganowanian Races.*—In addition to the three major divisions of mankind thus determined by the evidence of language, a fourth division has been suggested to include the barbarian races of the New World; and for this branch of mankind the name Ganowanian has been proposed by Professor Lewis H. Morgan, of the United States. In the Seneca-Iroquois dialects the word *gano-wano* signifies "bow-and-arrow," and Professor Morgan has seized upon this expression as indicating the most universal characteristic of the Indian races. They are, and have always been, the wearers of the bow. Just as the root *ar* has furnished to Max Müller and other European scholars the hint for the ethnic name Aryan, meaning the races of the plow, just as *tura*, meaning a horseman,

GANOWANIAN TYPES—UCAYLI INDIANS.
Drawn by P. Fritel.

has furnished the root of the word Turanian, descriptive of the nomadic races of Asia, so the word Ganowanian may properly be employed to designate the races of the bow and arrow. Linguistically considered, the various tongues of the Indian family of men belong by analogy to the same group with the Turanian languages of Asia. They have the same peculiarities. They are monosyllabic, and all complex and compound ideas are expressed by the agglutinative process; that is, the mere juxtaposition of one monosyllable with another, until the mind of the speaker is satisfied with the modification.

The Ganowanian, or bow-and-arrow, races.

SEA NEGRO TYPES—NATIVES OF DOREY.
Drawn by P. Sellier, after a sketch of Dumont d'Urville.

IV. GEOGRAPHICAL ETHNOLOGY.—We have thus considered three of the general methods which have been adopted for classifying the human race into species and varieties. Still another plan has been proposed by a certain class of writers with a view to the ethnic division of mankind. This we will now consider as the fourth attempt to group the different families of men according to their origin and race descent. It has appeared more feasible to many inquirers to use geography as the basis of a classification rather than alleged affinities of blood or actual identities of language. It has been thought that for practical results the arrangement of the human race according to its continental distribution and its local developments would be of greater value than the somewhat theoretical analysis of mankind according to linguistic distinctions. The result has been a more elaborate but less valuable classification than by any of the other methods. The plan in question begins with a hypothetical center for the human race, located in the Indian ocean, west of Hindustan. From this supposed origin of mankind streams of ethnic descent are carried shorewards from Lemuria until, touching the various continents, they are deflected and distributed into all parts of the earth. According to this scheme we have the following results:

General theory of geographical ethnology.

1. The *Papuans*, with their derivative

families of Negritos, Papuans proper, Melanese, and Tasmanians. These peoples, as their names indicate, are distributed in Malacca, the Philippine islands, Papua, Melanesia, and Tasmania.

Summary of results by the geographical method.

2. The *Hottentots*, with their two leading branches, the Hottentots proper and the Bushmen, both inhabiting Capeland.

3. The *Kaffirs*, with their three divisions, the Zulu-Kaffirs, the Bechuanas, and the Congo Kaffirs, inhabiting respectively the eastern, the central, and the western districts of South Africa.

4. The *Negroes*, with their four principal divisions of Tibbu Negroes, Sudan Negroes, Senegambians, and Nigritians, inhabiting the regions indicated by their respective names.

5. The *Australians*, with the two geographical branches of North Australians and South Australians.

6. The *Malayans*, with their three divisions of Sundanese, Polynesians, and Madagascans, the first two inhabiting the Sunda archipelago and the Pacific islands, and the latter the island of Madagascar.

7. The *Mongolians*, with their three varieties of Indo-Chinese, Coreo-Japanese, Altaians, and Uralians, the first belonging to Thibet and China, the second to Corea and Japan, the third to Central and Northern Asia, and the fourth to Northwestern Asia and Hungary in Europe.

8. The *Arctics*, with the two principal divisions of Hyperboreans and Esquimaux, belonging respectively to Northeastern Asia and Northeastern America.

9. The *Americans*, with four leading divisions, the North Americans (Indians), Central Americans, South Americans, and Patagonians, distributed according to their several ethnic names.

10. The *Dravidians*, with two race developments, the Deccanese of India and the Singalese of Ceylon.

11. The *Nubians*, with their three varieties, the Shangallas and Dongolese of Nubia, and the Fulahs of Fulah.

12. The *Mediterraneans*, divided according to this scheme into Caucasians, Basques, Semites, and Indo-Europeans; the first of these four being named from the range of the Caucasus, the second belonging to the northeastern portion of Spain, the third being limited to Eastern Europe and portions of Northern Africa, and the Indo-European branch being nearly coïncident with the European division of the Aryan race as defined in the linguistic scheme above.

ESQUIMAÜ TYPES.

We thus have, according to the geographical scheme, no fewer than twelve major divisions of human kind, represented by thirty-seven different races,

many of which are in turn divided and subdivided into various peoples and tribes, according to their localities, languages, and ethnic peculiarities.

On the whole, this method of classification according to the geographical basis is less satisfactory in its results than any of the others presented. It assumes that tribes of a given stock will, as a rule, migrate in the same direction and occupy the same territories. It is based upon the hypothesis that an aggregation of peoples in any given part of the world is *of itself* a proof of a common race descent. On the contrary, it is well known that in many parts of the world races and tribes of men, as wide apart as the poles in their ethnic affinities, are geographically associated. A classification like the above, which places so old and radical a stock as that of the Semites in the same group with the Indo-European races, lacks every element of accuracy, and tends to perpetuate the worst vices of the old system of ethnology. None the less, such a division of mankind as that presented in the geographical scheme above has its value when set in comparison and parallelism with other and more rational ethnic classifications.

Unsatisfactory character of geographical classification.

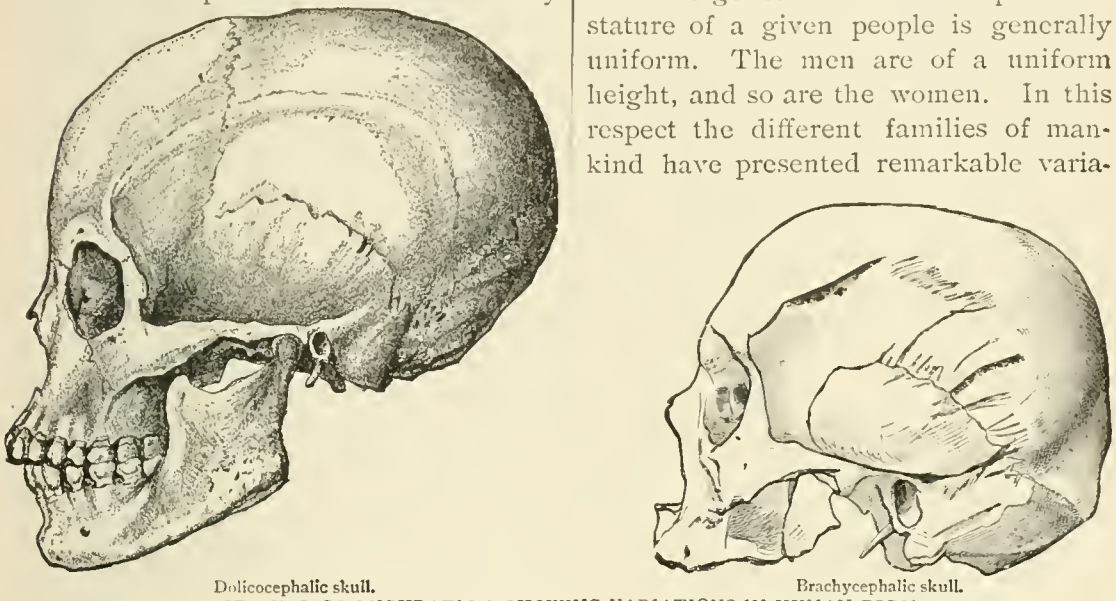
NUBIAN BOY—TYPE.—Drawn by Ishmael Gentz.

V. SCIENTIFIC ETHNOLOGY.—In the schemes of race descent thus far presented the linguistic plan of division most nearly approaches a scientific basis. There are in the same, however, certain unscientific conditions that must

Elements of uncertainty in linguistic method of race division.

be eliminated before the division of the human race by language *only* could be accepted as a finality. One of these conditions is the patent fact that a people of a given ethnic origin may, in the vicissitudes of history, adopt a speech other than its own, and thus be thrown in a classification very different from that to which it really belongs.

Several instances might be cited in which this phenomenon has actually presented itself. At times the conquering race absorbs the language of the conquered people, and, in such a case, subsequent investigation would be put at fault if the linguistic affinity of the people were accepted as the sole criterion of its race relationship. The conspicuous modern example of the Normans, who abandoned their own Teutonic speech and adopted French as their vernacular, carrying the same with them into England, and effecting in the English language a permanent modification by the infusion therein of linguistic elements which they had borrowed from another people, is sufficiently well known, and completely establishes the possibility and probability of error in classifying by means of language only.



Dolicocephalic skull. Brachycephalic skull.

CRANIAL CONFIGURATION, SHOWING VARIATIONS IN HUMAN FORM.

But there are other means of a more strictly scientific character which may be employed in classifying the divisions of the human race. Differences or identities in anatomical structure, persistently transmitted from generation to generation, constitute a valid evidence of ethnic divergence or relationship. The stature of a given people is generally uniform. The men are of a uniform height, and so are the women. In this respect the different families of mankind have presented remarkable variations. Some approximate the stature of giants, and others of pygmies. The proportions of the skeletons likewise constitute a fair basis of distinction between people of one race and those of another. The character of the hands and the feet, the length and proportion of the arm bones and the legs, the particular figure of the chest, and especially the facial angle, are peculiarities which may well be employed in a scientific way in distinguishing people of one race descent from those of another.

Possibility of classifying on variations in form.

More especially the figure and capacity of the skull are typical, each family of men having a cranial configuration and development peculiar to itself.

Careful investigations have shown the limits of these variations, and have determined those features of the skull and brain which are distinctive of several races of men. The hair of the head, likewise, has furnished a distinguishing mark in different peoples. It is found that the hair in different races ranges all the way from a woolly fiber, presenting a triangular section and having its vital channel on the exterior surface, to the straight, tubular filament which constitutes the head covering of some of the superior races. Between these extremes are all varieties of capillary formation. These varieties are found to

Crania and skulls as a means of determining race.

PAPUAN TYPE, SHOWING CRISP HAIR.

be persistent from generation to generation and from century to century. Specimens of human hair recovered from the granite crypts of Egypt, where they were laid more than two thousand years before our era, exhibit the same peculiarities and diversities of structure as are found on the heads of living races. Such specific differences in the external covering of the skull may well be used in a scientific way as a mark or criterion by which the different families of mankind may be discriminated the one from the other.

AMERICAN INDIAN TYPE, SHOWING STRAIGHT HAIR.
Drawn by Riou.

The human skin also has its particular features and peculiarities, unlike in the different types of mankind. This is said more particularly of the *color*. Of all the features with respect to which men differ in physiological constitution the pigmentary character of the cuticle is perhaps the most marked, invariable, and persistent. This fact has been selected by many ethnographers as the best consideration from which to frame a scheme of division for the human species. It is found that the different races have different colored skins; that a given race is sufficiently uniform in its hue; that the color once determined, is persistent, reproducing itself from age to age, and being recognizable even after thousands of years as belonging to a certain species. Why not, therefore, adopt the color of the body as the most marked

Color of the skin a true test of ethnic affinity.

and invariable characteristic by which to distinguish the ethnic classification of the various peoples?

Such a principle of division appears to be in every wise scientific. The color of the skin is a physical fact in nature, and its invariability in a given species assures the constancy of the fact and furnishes a guarantee against error. No anomalous departures from the given standard of color need be expected except in the case of individuals, and such exceptions would in no wise disturb the regularity of the law. Moreover, the other sources of information, the other bases of division of the human family, may well be used as auxiliary to the truly scientific classification of mankind by means of color. All that is known historically of the different races, all that is known of the various branches of the human family as determined by means of the languages which they speak, may be brought to bear upon the problem to rectify and amend whatever may be suspected of error in the classification by means of color.

Scientific classification may be made from color.

Such a method of division has been many times attempted by scholars, but until recently the results have been variable and uncertain. The reason of this is found in the imperfect observation which has first been given to the question. What are the different colors presented on the covering of the bodies of men? What primary or secondary hues are really characteristic of the human skin in different races and countries? Error in deciding these questions has been at the bottom of all diversity in results.

Sources of former error in this method of classifying.

NIGRITIAN TYPES, SHOWING WOOLLY HAIR.
Drawn by Madame Paule Crampel.

It appears strange to the thoughtful inquirer of the present day that so little accuracy has been displayed by those who have attempted to note and describe the different natural colors of the human skin. It will readily be allowed that an examination of the whole race now occupying the earth will discover nearly all colors and shades of color, from one extreme of the spectrum to another; but a very casual examination will show that these various tints are reducible to a few, and these to

still fewer primary pigmentary distinctions.

The great error made by those ethnographers who have attempted to use color of the skin as a basis of classification has been in allowing too many distinctions of tint. Inability on their part to generalize the facts, and to reduce the different hues to a few radical distinctions, has been the fruitful source of all inaccuracy and confusion. The first classifications attempted on this basis of color resulted in multiplying rather than in simplifying the classification of the human race. According to these first efforts there were white men, yellow men, olive-colored men, red men, orange-colored men, copper-colored men, brown men, black men, and many other slighter distinctions which tended to confuse rather than to establish a scientific division. All this turned upon inaccuracy of perception. It is the feature of modern inquiry that the sense-perception with which it begins has become constantly more accurate and penetrating in recent times. It is now clearly perceived that there are by no means so many fundamental colors to be recognized as the distinguishing characteristics of the different races. On the contrary, there are but few. Without passing through all stages of the inquiry, it is sufficient to say that the very best scrutiny of the actual facts shows that there are only *three primary colors peculiar to the human body*; and that these colors are ruddy, black, and brown. From these fundamental and characteristic tints of the human skin all the other varieties are easily derived, and to them all minor distinctions are readily referred.

Only three primary colors of the human skin.

ENGLISH TYPE (MRS. SIDDONS), SHOWING WAVY HAIR.

What, then, is the true nature of these three fundamental colors peculiar to the races of mankind? It will be noted that the term *white* is rejected. This is done for the sufficient reason that there are not now and never were any tribes of people on the earth to whom the term white could properly be applied. The fairest-skinned specimens of the human race are very far from white. He who has

The term ruddy substituted for white in this treatise.

not himself looked candidly and carefully at the fact here referred to must needs be surprised to note how great the error is in describing the color of any people as white. The races that have been recognized as white are in reality *ruddy* in color, and approach much more nearly to the standard of red than the Indian peoples, who have been erroneously defined as red men.

The so-called Caucasians, for instance, who perhaps present the skin in its fairest tint, are truly a ruddy people. The peculiarity of the skin is its transparency and the consequent revelation of the blood in the capillaries. The red tinge of the blood is thus discernible through the cuticle, and the flush of color, slighter or more emphatic, is always ruddy in its character. The peoples having this quality of skin are the *blushing* races. With every varying degree of excitement the blood appears or recedes in the skin at the surface, giving a deeper or paler tinge to the body. But under no conditions can the skin be said to be white. The fairest infant ever born into the world, even when bloodless and cold in death, is so far from being white that a really white object placed alongside of the skin furnishes a contrast so striking as at once and forever to disabuse the judgment of the beholder. The term white, therefore, as one of the definitive epithets descriptive of the color of the human race, must be rejected, and its place be taken with the more accurate term ruddy. We thus have in a scientific classification of mankind based on the distinction of color, first of all:

THE RUDDY TYPE—PAUL CRAMPEL.
Drawn by H. Thiriat, from a photograph.

No races may be properly defined as white.

I. THE RUDDY RACES.—It is found when this distinction of color is applied to the great facts under consideration that the larger part of *the historical nations* of the earth come under the classification of ruddy. The great races who first

redeemed the world from barbarism were of this color. It is quite certain that those strong and heroic peoples who appear in the remote horizon of the primitive world were ruddy in their complexions. Speaking from a biblical point of view, all three of the Noachite races, with their several divisions, had complexions of this hue. This is true alike of Hamites, Semites, and Japhethites. The long prevalent notion that the Hamites were a black race, corresponding roughly to what we call African, in modern history, is utterly untenable. They had, on the contrary, the same general complexion—somewhat intensified by the scorching sun of the climates in which they were for the most part developed—with the cognate races of Shem and Japheth. Or, if we speak from the historical point of view, we shall find the same indications of the fundamental identity in color of the early races who developed civilization in the earth. The Indo-Europeans were all ruddy in complexion. From the foothills of the Himalayas across the table-lands of Persia into Ionia and Macedonia and Greece and Italy and the "isles of the gentiles" the same fundamental race complexion is discoverable. Likewise, the Semites and the Hamitic races, noted from the historical point of view, are found to be of the same bodily color. Language contributes its evidence also to establish the same general fact as to the complexion of the Indo-European and other Noachite families of men. They were all ruddy, and the hint in Genesis of the *red-earth* color of the Adamite would seem to be justified by the facts observable in several of the principal divisions of the human family.

What races may be correctly classified as ruddy.

THE BROWN TYPE—MISTRESS SENKI.
Drawn by E. Ronjat

II. The Brown Races.—The second fundamental division of mankind determined on the line of color is by the *brown* complexion, which characterizes many of the leading races. It will be observed from the selection of this hue that many varieties of color may be referred thereto. Several shades of yellow and of red may be correctly carried back into a fundamental brown, which is the composite of black with one of the two tints referred to. Careful observation will show that this is the actual color of the

General analysis of the Brown races.

great races of Northern and Eastern Asia, as well as of all the aborigines of the two Americas and Polynesia. As the major division of these races we may cite:

1. The *Asiatic Mongoloids*, corresponding in general terms with the Mongolian race indicated by historical inquiry, or with the two divisions of the Turanians according to the linguistic division.

2. The *Polynesian Mongoloids*, or the peoples scattered through the islands of the South Pacific, with the exception of the Melanesians and the Australians.

3. The *Dravidians*, or the Deccanese and the people of the Micronesian islands north and east of Australia.

III. THE BLACK RACES.—It is clear, on an examination of the facts, that many of the peoples, even the primitive races distributed in portions of the world lying in the equatorial regions, are properly defined as *Black*. The pigmentary deposit under the cuticle is of such a character as to absorb all or the greater portion of the rays of light, and to return to the eye only that negative sensation which we define as blackness. The line of chromatic division between these races of Black men and those who were defined as Brown, is that under the cuticle of the skin of the latter peoples a certain percentage of coloring matter is combined with the black pigment, producing the various shades of color known as brown.

The four groups of the Black races.

This characteristic difference between the two colors is constant, and tends to perpetuate itself by the physiological law called "reversion to the original type." This is to say that in a contact of the various races, Black and Brown and Ruddy, and in their intermingling of blood, there is a tendency for one or the other of the elements of ethnic constitution to declare itself and become dominant over the rest. Given a sufficient lapse of time, and these intermediate varieties return to the one or the other of the original types from which they are derived. Geographically speaking, the Black races are distributed throughout the larger part of Africa and through the whole of Australia and that portion of the Pacific archipelago called Melanesia. These are the limits of the natural dispersion of the Black races. The ethnic divisions of this third primary family of men are:

1. The *Negroes*, who occupy the larger band of Central Africa from east to west, and are also distributed through a great portion of the southern division of the continent.

2. The *Australians*, occupying all of Central and Southern Australia, except the coast region on the east and north.

3. The *Hottentots*, distributed through the larger part of the southern extremity of Africa.

4. The *Papuans*, occupying the island of New Guinea, the northern and eastern maritime districts of Australia, the island of Tasmania, and, in general, the Melanesian archipelago.

The foregoing classification of the human race on the scientific method and by the distinction of color is, perhaps, as nearly a satisfactory solution of the problem as can be given in the present state of knowledge. The three distinctions of Ruddy, Brown, and Black races are fundamental. They are broad enough to include the whole race of man, with its multiform developments in ancient and modern times. The classification is sufficiently ample to embrace in its major and minor divisions all the races and peoples which have been distinguished

Other plans of classifying may be harmonized with this.

from each other by means of historical and linguistic inquiry. It is easy to conform to this plan of division all the others that have been suggested, and to make them consistent with the wider and more scientific scheme. Thus, for instance, the biblical race of Japheth, the historical divisions of mankind called Indo-European, the ethnic branches of men called Aryan in the linguistic classification, all fall under the common designation of Ruddy races. With these are grouped by means of the same color distinction the Semitic families of men, and also the Hamitic divisions. These ten races taken together constitute the whole group, which may be defined by the term Ruddy and considered as of a primary, common descent.

THE BLACK TYPE—NEGRO MAKUTULU.
Drawn by Riou.

In the second place, the widely disseminated Brown races, covering nearly the whole of Asia, the two great continents of the West, and the greater part of Polynesia, may be grouped together on the line of color and considered as a common family in its origin and race descent. It will be the purpose in the following pages of the present book to trace out the lines of the great tribal and race divergencies and migrations which in the lapse of ages have carried these Brown peoples over by far the largest districts of the earth. It will be understood, of course, that the race classification of the peoples of the two Americas as here presented relates to the *original peoples* of these continents, and not to the Indo-European nations that have taken possession of them in recent times by migration and conquest.

General distribution of the Brown races.

The third general division as indicated in this analysis on the basis of color has already been pointed out in its ethnic and geographical distribution. No branch of the Black races has of its own motion crossed the equator of the earth to a point higher than the twentieth degree of north latitude. It will be found in the subsequent chapters of this book that the dispersion of this division of mankind was by means of a westward stream flowing in from Eastern Africa and spreading in many branches through all those parts of the continent between the equatorial region and the Cape of Good Hope, while the eastern stream bore off by way of Southern Hindustan into the great, closely distributed islands lying to the south of Asia. It is believed that sufficient is now known of the

Outline of the dispersion of the Blacks.

movements of the Black races to delineate their tribal divergencies and migrations with tolerable certainty, and although much will remain to be rectified and amended by subsequent investigations, something may be at present advanced to enlarge the borders of common knowledge relative to this the least known and least progressive of the great divisions of mankind.

From these considerations and others that may be readily deduced therefrom, it has been determined to employ in the present work the scientific method in classifying the different races of men, and to use the *color of the body* as the fundamental fact in considering the scheme of division. In all the subsequent parts of the present work, in the description of the migrations of the primitive tribes and families of men, in the delineation of manners and customs, and the peculiarities of national development which will in great measure fill up the body of the work, it is purposed to keep always in mind this fundamental division of mankind into, I. RUDDY RACES; II. BROWN RACES; III. BLACK RACES; with their manifest divisions into the three branches, Hamite, Semite, and Aryan in the first; three divisions of Asiatic Mongoloids, Polynesian Mongoloids, and Dravidians, in the second; and four branches, Negroes, Australians, Hottentots, and Papuans, in the third. These ten race classes of mankind will constitute the basis of much of the discussion in the present and the succeeding volumes.

Mankind to be divided into Ruddy races, Brown races, and Black races.

CHAPTER XXIV.—NOACHITE DISPERSION CONSIDERED.

SO far as the present resources of human knowledge have indicated the primary seat and early movements of the Ruddy races of mankind, the same began on the north shores of the western gulf of the Indian ocean. The scene of this important primitive aspect of the race was probably in the southern part of Beluchistan, eastward from the Persian gulf. When these statements are made the whole of our knowledge on the subject may be said to have been delivered. History knows little besides of the time or the advent of this primary stream of human existence; but it can hardly be doubted that this is the real seat of the Adamite and his descendants. Ethnologists have generally been disposed to go further, to trace backwards the stream of this division of the race to the shores of ocean, and thence to carry it by hypothesis far out into the so-called Lemuria, a supposed submerged region in the bed of the Indian ocean.

Primitive seats of the Adamites.

On the theory that the Black, the Brown, and the Ruddy races of mankind have all had a single ancestral origin, there is some ground for such a hypothesis. The first tribes of Black men appear to have struck the continent of Africa from the east. In like manner the Brown races seem to have touched the continent on the coast line eastward of the Persian gulf; while the ancestors of the Australians and Papuans appear

Apparent point of origin for all the races.

to have reached their destination from the northwest. Thus the observer, standing on the western shore of India, the eastern shore of Africa, or the southern shore of Beluchistan, would seem to see the three major divisions of mankind approaching from the deep, as if from some common origin under the sea.

Nor has tradition been wholly silent in witnessing to such a primeval movement of the race landwards from the sea. One of the oldest traditions on record is preserved in a fragment of Berosus, and indicates the ocean origin, not only of the arts, but of man himself. A portion of the story is as follows:

Berosus recounts the myth of the sea god Oan.

"Then there appeared to them *from the sea*, on the shore of Babylonia, a fearful animal of the name of Oan. His body was that of a fish, but under the fish's head another head was attached, and on the fins were feet like those of a man, and he had a man's voice. The image of the creature is still preserved. The animal came at morning, and passed the day with men. But he took no nourishment, and at sunset went again into the sea, and there remained for the night. This animal taught men language and science, the harvesting of seeds and fruits, the rules for the boundaries of land, the modes of building cities and temples, arts, and writing, and all that pertains to civilization."

In the fifth chapter of the book of Genesis we have an account of the Adamic race from the beginning down to the Deluge. This space is occupied with ten successive patriarchs and their expanding families. To these great longevity is attributed, and the narrative indicates in various ways the rapid tribal development of the race. It will be noted also by a comparison of the fifth chapter with the fourth that two parallel lines of descent are recorded, the one through Cain, and the other through Seth. "For," said Eve, "God hath appointed me another seed instead of Abel, whom Cain slew."

Outline in Genesis of the Adamic races.

LANDSCAPE OF THE NOACHITE DISPERSION.—BENDER-DILEM.—Drawn by Taylor, after a sketch of Houssay.

The Adamic descendants are traced in the fourth chapter down to the children of Adah and Zillah, the two wives of Lamech; that is, to Jabal, "the father of such as dwell in tents and such as have cattle;" to Jubal, "the father of all such as handle the harp and organ;" and to Tubal-cain, "an instructor of every artificer in brass and iron." Here the narrative ends, and the other branch of the Adamites, that is, the descendants of Seth, are taken up, down to Noah, the son of Lamech. The recurrence of common names in both lines of descent introduces a good deal of confusion, but the line of Seth, considered by itself, is straight through ten generations.

Value of the Berosian account of the Chaldæans.

The Hebrew narrative of the Adamite and his posterity to the Deluge is here cited in part because of its striking parallelism with the secular tradition handed down by Berosus. This celebrated ancient author was a priest of Bel, at Babylon, and flourished there in the first half of the third century before our era. He was a native of the country and well acquainted with its earlier and later history. He knew as well as one might know in an uncritical and credulous age the annals not only of the later Babylonian empire, but also of the older Chaldæan dominion which had been established on the lower Euphrates in the very earliest stages of human history.

Ten Chaldee mythical kings; conformity to the Hebrew scheme.

In that part of his work devoted to the chronology of the Chaldæan kingdom, Berosus describes the epoch before the flood; for, like the Hebrew author of Genesis, he has an account of a universal deluge of waters, through which a single great captain named Xisuthrus, with his family, came safely in a ship and descended from a mountain, to repeople the earth. To the antedeluvian era Berosus also assigns a dynasty of ten kings. To these reigns of fabulous duration are given the ten eons of their dominion, being as follows:

	Years.
1. Alorus, a Chaldæan, who reigned.....	36,000
2. Aloparus, son of Alorus, who reigned...	10,800
3. Almelon, a native of Sippara, who reigned.	46,800
4. Ammenon, a Chaldæan, who reigned....	43,200
5. Amegalarus, of Sippara, who reigned...	64,800
6. Daonus, of Sippara, who reigned.....	36,000
7. Edorankhus, of Sippara, who reigned...	64,800
8. Amempsinus, a Chaldæan, who reigned	36,000
9. Otiartes, a Chaldæan, who reigned.....	28,000
10. Xisuthrus, the Chaldæan Noah, who reigned	64,800
A total of ten kings, reigning.....	431,200

The general conformity of these two schemes of ethnic descent must be patent at a glance. The Chaldæan and the Hebrew accounts of this dim age of an ancestral race agree in the important consideration of ten successive patriarchical kingships. It is easy to observe the more moderate conception and outline of the Hebrew scheme of descent and longevity, and the wild extravagance of the Chaldæan tradition. But the pattern and outline of the progress of the race are alike in both, and in either case this line of long-lived mythical rulers ends with a righteous captain, whose virtue and wisdom, in the wickedness of his surroundings, enable him to go safely through the waters of a deluge and repeople a new world on the hither side of the catastrophe.

The headmen of the Adamite clans.

The identity of the two narratives in their essential spirit and leading features can hardly be doubted. We thus see in the maritime parts of Beluchistan, at a time almost unimaginably remote, even from the standpoint of the oldest historians who have attempted to trace the course and development of mankind,

the apparition of a ruddy race of men expanding through a mythical age of unknown duration, and entering at least three stages of civilizing activity. Jabal was the "father of such as dwell in tents and of such as have cattle." This is manifestly an outline of the beginning of the pastoral life which occupied so large a part in the subsequent history of the races of Western Asia. Jubal, the brother of Jabal, is represented as being the "father of all such as handle the harp and the organ." From this we are to infer that at least the musical branches of art made their appearance in the East contemporaneously with the development of the pastoral life. The makers of tents and the keepers of flocks and herds discovered harmony, and became the makers of such instruments as have pleased the senses of men in all subsequent ages with the concord of sweet sounds.

To the same epoch, or a little later, in the tribal evolution, is assigned Tubal-cain. He is represented as a worker in brass and iron. Very notable is the fact that the composite metal *brass* is here mentioned as the material of the earliest metal work of the Adamites. Iron also is named as the other substance in which Tubal-cain and his successors became proficient as workmen. It would appear in accord with right reason that both of these names of the metals are erroneously deduced from some original which has been misunderstood in translation. The primitive men could hardly have begun as workers in *brass*, since the

Question of the primitive metallurgy of the Semites.

THE FATHERS OF "SUCH AS DWELL IN TENTS"—OLD SEMITIC TYPES.

copper and zinc of which it is composed must first have been employed and the ratio of their combination discovered before brass could have an existence. Moreover, the extraction of iron from the matrix is a process so difficult and so late in the order of metallic discovery that, as we have already seen in another part of this work, it follows and does not precede the discovery of copper, of tin, of the precious metals, and, indeed, of nearly all the other metallic elements common to the surface of the earth.

At the close of this Adamite period in the history of the Ruddy race we come to that great catastrophe, the Deluge of waters. In respect to this event tradition was busy throughout the primitive world. Among almost every people there was a mythical reminiscence of a flood by which their ancestors were destroyed from the earth. The diluvian legend generally assigned the wickedness of the race as a cause of its overthrow. The tradition of such a visitation always presented itself most emphatically in countries so situated as to be subject to inundations. Perhaps the greatest seat of such a belief was in the valleys of the Lower Euphrates and Tigris. It was from this region that the Hebrew account of the Deluge was transmitted by Abraham and his posterity to the west, and there recorded in the annals of that people. At the same time a like tradition was handed down among the Chaldæans, and at a later epoch in history was repeated and modified by the Assyrian seers, on the Upper Tigris. The story of Deucalion and his survival of the Deluge was rife among the primitive Greeks, and other primeval nations had like accounts of a like disaster.

Dissemination of traditions of a deluge.

To this general dissemination of the belief in a deluge of waters by which the race of man was swept away, the ancient Egyptians furnish a remarkable exception. Their legends and mythology furnish no account of any such event, either in the primitive or later ages of their country. It is easy to see in this fact the action and reäction of natural and supernatural elements in the primitive history of a people. The Nile is, perhaps, the only river in the world whose swellings and fallings obey a certain law, the knowledge of which secures the inhabitants of the valley from disastrous consequences. The regularity of the coming and the recession of the waters furnishes a guarantee against all harm. A curse is thus converted into a blessing; and the river becomes, instead of an object of dread and superstition, an object of reverence and worship! The uniformity of nature stood guard over the welfare of the people who built the pyramids, and even if a prehistoric deluge had occurred before the civilized development of the Egyptian race, the tradition of it would have perished in the presence of the future beneficent conduct of the great river. In other valleys of the East irregularity rather than uniform flood and subsidence was the law, and wherever, as a result, disaster on many occasions and from natural causes must necessarily have ensued to the people living on the river banks, the tradition of a great catastrophe overwhelming all would be perpetuated and handed down as a distinct and memorable crisis in the past history of the world.

Why the Egyptian race possessed no such tradition.

However this may be, we find a remarkable conformity between the Chaldæan and the Hebrew account of the disaster by which the race of man was swept away at the close of the Adamite

era. The well-known narrative of the Deluge given in the seventh chapter of the Book of Genesis need not be here repeated. Nor is it desirable to recount in full the story of the flood as recorded by the ancient Chaldæans and Assyrians. The principal features of the

General harmony of Chaldæan and Hebrew accounts of the flood.

MESOPOTAMIAN LANDSCAPE.—View of Mossul.—Drawn by E. Flandin.

latter, however, will serve to show the fundamental identity of the three principal narratives of the Deluge. The Chaldæan and Assyrian accounts differ in this, that the latter assigns as a *cause* for the destruction of the human race by a flood the wickedness of mankind in the earth, whereas the older, or Chaldæan, account simply recites that the god Bel revealed to Xisuthrus his purpose to destroy the world by a flood. The great captain was ordered to bury the records of his country in Sippara and to embark in a ship, with his kindred and friends. He was also directed to take into the ark with him all manner of living creatures. When everything was completed and the ship, nine thousand feet in length, was closed, the Deluge came. In course of time Xisuthrus sent out birds, which at first came back without evidence of resting, but afterwards with mud on their feet. At length the ship rested on the Gordyæan mountain, and the inhabitants came forth to repeople the earth.

In the Assyrian account the divinity who revealed the flood is Hea, and the Assyrian Noah is named Sisit. He, as

in the case of his Chaldæan prototype, gathered all manner of living creatures and seeds of the vegetable world into his ship. Then Samas, the sun god, sent the flood. There was a great storm that went over the nations, and the waters reached up to heaven. Even the gods had to ascend to their highest thrones and sit there until the subsidence. All living things outside were drowned. At last the waters abated; the ark rested on Mount Nizir, and Bel led forth Sisit by the hand to repopulate the country. It is sufficient to note that the narrative given of the great catastrophe in the seventh chapter of Genesis is much more serious and elevated than the two forms of tradition which were preserved to after times in the valleys of the Euphrates and the Tigris.

The Assyrian tradition departs from the older forms.

Apart from these traditional accounts of the manner in which the Adamite race came to its termination, we turn to a more scientific aspect of the question. It appears that before the destruction of this people, before they had reached the scene—at least the central scene—of their disaster, they had already begun to part into the three branches of ethnic life already mentioned as the major divisions of the Ruddy family of mankind. It is in evidence that the Noachite race, from its old maritime *débouchure* on the shores of Gedrosia, the modern Beluchistan, made its way first to the north, in the direction of the Carmanian desert, and was thence deflected to the west. It was here, on the tableland of ancient Iran, in the district of country east of Yezd, that the ancestors of the Ruddy races of mankind seem to have felt for the first time the impulse of westward migration. Here, at any rate, they were deflected toward the setting sun. Here, too, they appear to have begun that threefold ethnic separation which was destined, in far ages and countries, to give to history some of its most vigorous and highly developed peoples.

Early division of the Adamites into three branches.

If we fall back again for a moment upon the classification the nomenclature of which is derived from the three sons of Noah, we find here the beginnings of the division. So that if we regard the valley of the Euphrates and the Tigris as the center, or seat, of the great diluvian disaster which subsequently occurred, we must conclude that the Ruddy peoples who made their way into these valleys from the east had already separated, or at least begun to separate, into Hamites, Semites, and possibly Japhethites. The adoption of such a hypothesis would tend to explain or remove the difficulty which historians, ethnologists, and linguists alike have experienced in the attempted classification of the most ancient peoples of the Tigrine and Euphratine valleys. This work has never been satisfactorily and conclusively accomplished. In a general way it has been decided that the old Chaldæans were Hamitic in their origin and development. In like manner the preponderance of evidence has tended to show that the Assyrians were Semitic in their race descent and character. But the evidences also indicate much mixture and confusion in the primitive history of these regions.

Uncertain ethnic relations of early Mesopotamians.

It is extremely difficult, either by means of historical traditions, ethnic traces, or linguistic proofs, to determine satisfactorily to which branch of the original threefold division the Assyrians and the Chaldæans respectively belong. Moreover, at later periods, when the Hamitic race has well emerged from this

Point of dispersion eastward from Assyria and Chaldæa.

region, and is discovered with all its peculiar traits in Southeastern and Southern Arabia and in Egypt, and when the Semites have likewise appeared, with their distinctive peculiarities well developed, in the West, the course from which the two races have manifestly come into subsequent fields of activity, when traced back-

IN KURDISTAN.—View of Little Ararat, with Group of Kurds in Foreground.—Drawn by Alfred Paris.

wards, shows a conjuncture *much to the east* of the Mesopotamian region and not in the valleys of the Euphrates and the Tigris. This is to say that at the time when the Hamite, the Semite, and the Japhethite races made their way *through* Mesopotamia to the West, they were already separated geographically, the Hamites being on the south, pressing close to the Persian gulf, the Semites in the center, and the Japhethites close up to the Caspian.

From these evidences and by this just train of reasoning, it would appear conclusive that the primary division of the Noachite family took place in the uplands of ancient Iran, at a point more than ten degrees of latitude eastward from the Mesopotamian region, which may be regarded as the center of the traditions of the Deluge. It is safe, therefore, in the ethnic scheme, to mark the division of the Noachites far beyond and to the eastward of the low-lying alluvial plains of Mesopotamia.

If, then, the observer should take his stand in the Arabian desert west of Mesopotamia and look thitherward in

the earliest epoch of human development, he might see emerging from the shadows the vanguard of two races, with possibly a third on the north. The Hamitic division of mankind would be seen making its way to the westward, close to the head-waters of the Persian gulf and bending, as if by preference, to the south into Old Arabia, next to the sea. The central phalanx would be the descendants of Shem, heading for the west, and, perhaps, deflected somewhat to the north, on its way from Ur of the Chaldees into Canaan. The Japhetic division, if seen at all, would be well to the north, close to the southern shores of the Caspian, and bending in a northwesterly direction toward the eastern limits of the Black sea. This may be called the Noachite dispersion of the human race. The lines of its progress westward lie between the southern extremity of the Caspian and the northern limits of the Persian gulf. This region is to Europe and Southwestern Asia what the wrist is to the extended palm. Mesopotamia, considered longitudinally from east to west and in connection with Kurdistan, is *a strait*, and through this strait the streams of the Ruddy races of men flowed out toward the open regions in the prehistoric ages.

Issuance of the Noachites to the west.

It is from this point of view that we may, in part at least, apprehend the ethnic characteristics of the primitive peoples of Elam and Chaldæa. Through these most ancient countries the Hamitic division of men made their way in their earliest departure and migration from the parent stock. It is, perhaps, safe to say that the Elamites were the first development of a Hamitic nationality in the world. This earliest lodgment of the oldest branch of the Noachites was in the country afterwards called Susiana by the Greeks, and the dominion established here remained for many ages a seat and stronghold of the primitive race. Historical traditions indicate that the Hamites came into this region by invasion, and that they displaced, by conquest, the original Semitic and possibly Turanian peoples who were there before them.

Probable directions of the Hamitic dispersion.

This view, however, is a doubtful hypothesis. As already stated, it is likely that the disentanglement of the Semitic and Hamitic tribes had not yet been completely effected when the Elamite nationality was founded; and it may well be confessed that Semitic influences were afterwards discoverable in the development of what was truly a Hamitic dominion. Geographically considered, the country here referred to was bounded on the north by the river Diyalah, on the east by the Kebir Kuh mountains, on the west by the Tigris, and on the south by the Persian gulf. It was a low-lying country, fertile and inviting, identical almost in character with those other regions of the world—Chaldæa, Southeastern Arabia, the valley of the Nile—where the Hamites established in subsequent ages the seats of their dominion.

Traces of ethnic admixture in primitive Elamites.

Primitive Assyria may be assigned to the Semites. Asshur was the son of Shem. The position of Assyria, *east* of the Tigris rather than in Mesopotamia Proper, would indicate its planting by early tribes of the Semitic race coming from the east. There are evidences that such a dominion, north of the Greater Zab and east of the Tigris, was planted as early as the fourteenth century before our era.

First distribution of the Semites and Japhethites.

The Japhetic branch is generally re-

garded as the oldest division of the Noachite family. The movements of this race have been by far the most complicated and difficult to trace. The first deflection from the parent stem was doubtless to the north or northwest of the common stream flowing westward. The point of departure of the Japhethites has already been indicated. It is more than likely that their first course after separation from the ancestral tribes was so well to the north as to bring them into contact with the lower extremity of the Caspian, in which event they would be turned back or deflected more directly toward Northern Asia. It may be fairly conjectured that this geographical circumstance lies at the bottom of the formation of that great ethnic whirl, or center, from which the Aryan races of subsequent times were all descended. It is not purposed in this connection to trace out the after ramifications of the Japhethites, or, indeed, of the cognate races of the south. It is sufficient to note that from the Japhetic center the subsequent migrations took place in both directions, east and west, while the Semitic and Hamitic movements followed a more orderly progress, the one toward Canaan and the other into Southeastern Arabia.

Indications that the Old Chaldæans were Hamitic.

It has been intimated above that the Old Chaldæan dominion on the Lower Euphrates was Hamitic in its origin. Several circumstances besides the mere course which the tribal migrations were then pursuing may be cited for assigning Chaldæa to the Hamites. Historical evidence shows almost conclusively that there were race prejudices and frettings between the Chaldæans and the Assyrians on the north. The two peoples were hardly ever at peace. There was a divergence of language, of tradition, and of religious ceremonials, but at the same time such striking analogies in all as to indicate close affinities of race.

Race troubles between Northern and Southern Semites.

It was the preponderance and pressure of the stronger Assyrian nationality on the north that, at the close of the fourteenth century B. C., finally overpowered the Chaldæan dominion and replaced it with Semitic influence in the south. By careful observation we are able to see, long anterior to this period, the race troubles between the northern and the southern people. There are indications of invasion and oppression on the part of the Assyrians respecting their southern kinsmen. It is not improbable that these difficulties were at the bottom of some of the earliest migrations to the west. Perhaps Eber, the father of Abraham, had drifted from beyond the Tigris into the low-lying country of the south. His name is said to signify "from beyond;" that is, from beyond the rivers. Doubtless he was either an immigrant into the low country or an invader. A family so situated, expanding into a patriarchical tribe, would soon find itself with unpleasant surroundings, and a cure for local troubles might be sought and found in a further migration into the freer west. Hence the Abrahamic exodus from Ur of the Chaldees.

Differences in remains of Chaldæans and Assyrians.

Another proof of the race diversity already existing between the Old Chaldæans and the people of Asshur is found in the monumental remains of the two countries. There is already a clear departure in the typical physiognomy of the Chaldæans and the Assyrians. The former are like the Elamites in personal characteristics, while the latter are of the well-known Semitic type, with hints of Medo-Persian modifications. It is easy for the ethnographer to see in the

features and person of the ancient Chaldæan the antitype of the Cushite, the Old Arabians, the Hamitic Canaanites, and even the Ethiopians and Egyptians. It will be readily agreed that the Semitic peoples became, in the course of time, predominant throughout Mesopotamia. It is likely that the Hamitic race, by pressure from the north, became attenuated even to actual separation around the head of the Persian gulf, and that the Elamite dominion on the east preserved the principal, if not the only, remnants of that race beyond the meridian of Chaldæa and Assyria.

Several facts of some interest come to light on an examination of the ethnic names of the three branches of the Noachite family. The word Shem means a "name," or more properly, "sons of a name." The sense is, that this division of the Noachites was an aristocracy *having a name*, that is, a lineal descent from reputable fathers, as distinguished from the no-name, or base-born, descendants of other stocks. The early Semites evidently regarded themselves as peculiarly the representatives of the Noachite race, and perpetuated the belief in the nameless, that is, the gentile, character of the cognate families of their own descent. The innuendo was directed against both the Japhethites and the Hamites, particularly against the descendants of Canaan in the west, whom the sons of Shem afterwards overcame and expelled from their territories.

Significance of the Noachite patronymics.

The evidence of this race contention and feud is plentifully scattered in the Hebrew writings. The old prejudice lies at the bottom of the relative priority of the sons of Noah. As a matter of fact, the Japhethites were the eldest, the Hamites second, and the Semites the youngest division of the Noachite family. But there was a constant effort, extending through many centuries, on the part of the Hebrew scribes and chroniclers to change this order and to give to Shem the rank peculiar to the eldest son. In the biblical ethnography the order of the three descendants is always given thus: Shem, Ham, Japheth. But it will be observed that even in the tenth chapter of Genesis, while the first verse preserves this order, giving priority to Shem, the analysis of tribes which immediately follows places Japheth in his true position, and assigns the place of youngest son to Shem. Such primitive quarrels as to the seniority of descendants were very common among the early families of men, and are of little value to modern scholarship except as illustrative of a striking and persistent feature of organization and belief existing in the earliest ages of human development.

Contention for precedence among Shem, Ham, and Japheth.

All the ancient nations strenuously insisted that they were respectively the most ancient of all. Priority seems to have been an idea which sufficed to establish right, and make all things legitimate in primeval society. "We were here first, and therefore possess this region, and are greater than you," was the language of every primitive people to its neighbors. As a result of this disposition, claims to extravagant antiquity were advanced by all, and were attested by long lines of successive monarchs, in successive dynasties, extending through fabulous ages. One of the principal devices to make good such claims was to extend the lives of their rulers to hundreds and thousands of years. The Berosian scheme presented above of the Noachite dynasty in Chaldæa down to the epoch of the

Strife of the ancients for the rights of priority.

HAMITIC RUINS AT DJAMA SIDI OKBA.—Drawn by H. Saladin, from a photograph.

Deluge is a sample of the plan which the ancients adopted to make good their claim of primogeniture and proscriptive right. The Egyptians, not satisfied with even the fanciful expansion of their dynasty, were wont to abandon terrestrial criteria and appeal to the planets for their antiquity. It was a common boast among the Egyptian priests that their people were *Prosclenoi*, that is, pre-Moonites, older than the moon in their occupancy and possession of Mizraim.

In the discussion of the Mesopotamian development of the different branches of the Noachite races, no attempt has been made to establish the chronological relations of the several ethnic divisions in the dispersion, or even to date the general epoch to which they all belonged. In fact, chronology is wholly at fault in considering such primitive movements of the race. As to the time when the Noachites may be said to have been deflected to the west, and to have begun their separation into different peoples, nothing can be alleged with even approximate certainty. The whole tendency of recent inquiry has been to extend the time relations of these early events. It is clearly perceived that the notions formerly prevalent about the time required for the peopling of different and distant regions of the earth, and the development therein of distinct nationalities, must be abandoned as totally inadequate for the ethnic evolutions to which they refer. It is known that the first progress of men gathering into tribes and nations is exceeding slow as compared with subsequent stages of human development. There is an accelerating tendency in the progress of mankind, and this manifest fact emphasizes the necessity of widening and enlarging the whole scheme of ancient chronology.

Chronology at fault respecting the Noachite races.

As it respects the Semitic and Hamitic peoples who created the earliest civil societies in Elam, Chaldæa, and Assyria, a few suggestions may be offered as to the time when the same occurred. If we look at the rise of the Hamitic race in the valley of the Nile we discover the most emphatic evidence of a very remote antiquity. It is safe to affirm that almost as early as four thousand years before the common era the primitive Egyptians, who themselves seem to have taken possession of the valley by conquest, were already a strong and progressive people. They had civil organizations and many well-developed institutions of religion and secular society. They were magnificent builders in stone, and appear to have been, from the earliest date of their *débouchure* into Northeastern Africa, in possession of considerable scientific knowledge. These Egyptians were descendants of the older Hamites in Asia. They came by migration and invasion into the country of their subsequent development. For this movement out of Asia much time must be allowed.

Evidence of great antiquity of Egyptian Hamites.

A greatly extended period must have elapsed between the founding of the first Hamitic societies in Lower Mesopotamia and that subsequent time when the Hamitic tribes, making their way westward through Syria, established themselves in Egypt. It is true that the formal chronology, so far as it has been recovered and reconstructed for the Chaldæan ascendency, does not by any means reach a period so remote as that of Egypt. But the movement of the race to the westward points unmistakably to the fact that the Chaldæan ascendency and the dominion of Elam were *long anterior* to the creation of political power in the val-

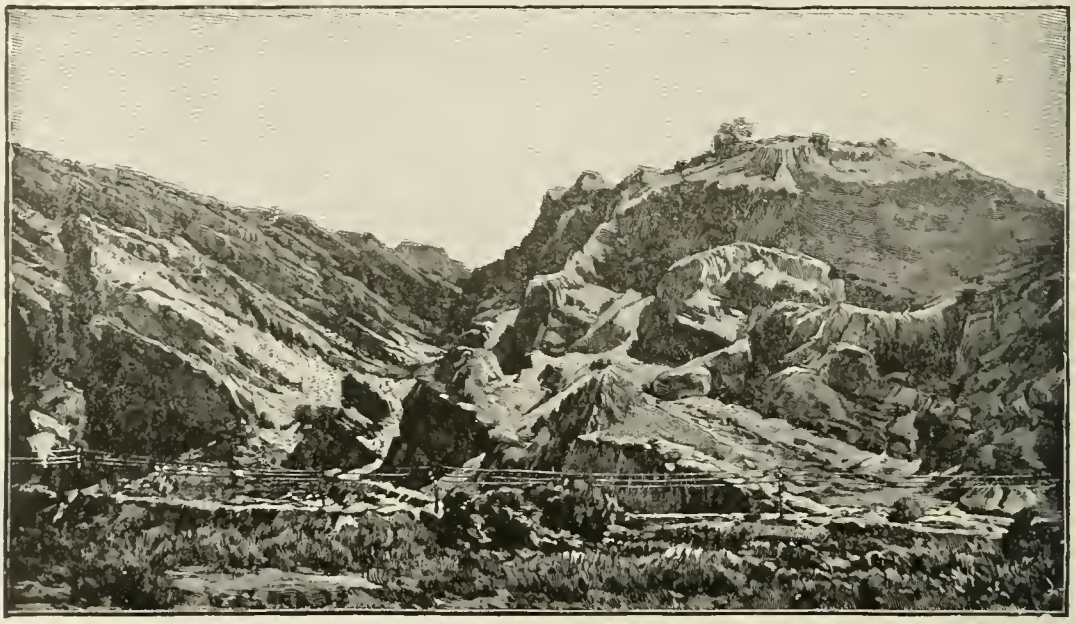
Probable derivation of the Egyptians from Chaldæa.

ley of the Nile. This indicates for the primitive peoples of Mesopotamia an antiquity far greater than history, or even ethnology in its current phases, has been accustomed to assign or accept.

Effects of environment on the migrant Noachites.

The country lying between Armenia and the head of the Persian gulf furnishes a good example of the influence of physical environment on the movements and development of the early races. Mesopotamia constituted a natural, perhaps an inevitable, stopping-place in the westward movement of the Noachites. Such was the situation as to make it necessary for them to pause, and to pause meant the growth of fixed societies. On the east of this region the country is defended by the bulwark of the Zagros and Kebir Kuh mountains. It is easy to see how the already half-separated races, drifting from the east, would be impeded for a time by the interposition of the mountain range. Presently, however, through the southern passes, the Hamitic division would make its way, while through the gaps of the Zagros the Semites would precipitate themselves into Upper Mesopotamia.

Before the immigrants would spread an open country, traversed by two great streams of living water, fertile in natural products, and inviting to settlement. The alluvial plain in Lower Mesopotamia would in a special manner provoke to permanent residence from the ease with which multiplying tribes could here support themselves by the resources of the earth. Adventure would soon carry the still half-nomadic peoples across the country to the western borders. Here, however, there would be a pause. Even the civilized man hesitates long, and the compulsion must be extreme ere he throws himself into the desert. Perhaps of all the natural landscapes presented on the surface of the globe the most forbidding and repellant is the desert.



PASS IN THE ZAGROS MOUNTAINS.—Drawn by D. Lancelot, from a photograph.

West and southwest of Mesopotamia is a wide stretch of desert country. It fatigues the eye and scorches the feet. On the north is the Assyrian desert, and

to the south and west stretches away the seemingly infinite waste of Arabia. Here are the fundamental conditions which made Chaldæa and Assyria a sort of necessity in the progress of the early race. It is not needed in this connection to enter elaborately into the geography of the valleys of the Euphrates and the Tigris and the adjacent upland countries. On the north, from the Caspian to the Black sea, stretch the Armenian mountains; on the south, is the sea; on the east, the Zagros range, and beyond, the great plateau of Iran; on the west, the boundary line is the long stretch of the Syrian desert.

Chaldæa and Assyria a necessity of the early peoples.

At the time of the development of the early empires in these valleys and for ages afterwards the two great rivers still discharged their waters by separate channels into the Persian gulf. Mesopotamia reached to the sea, and the mouths of the rivers were fully a hundred miles south of the present shore line. Along the banks of these streams, high up to the foothills out of which their upper waters are drawn, especially on the east by a multitude of smaller streams, the earliest, or at least one of the earliest, civilizations was developed in the world. It was the work of the Ruddy races coming from the east. Here they planted themselves at the north and the south, according to their race descent, and became in course of time much more strongly marked by ethnic differences than they were on their first arrival in the country. It is from this region that the different races belonging to the Hamitic and Semitic families of mankind made their way at length into the western foreground of history, where we shall discover them in a somewhat clearer light than that in which they have thus far been revealed. Here, then, is the end of what may be appropriately called the Noachite dispersion of mankind.

The Ruddy races plant themselves in Mesopotamia.

CHAPTER XXV.—THE HAMITIC MIGRATIONS.

IN the current chapter the attempt will be made to trace out geographically the various lines by which the Hamitic race was distributed, first into Southwestern Asia, and thence through a large part of Northern Africa, to the borders of the Western ocean. The inquiry will begin with the movements of the Hamitic division of mankind, not from any preference for that race as a dominant people of antiquity, not because their civilization reached a higher stage than that of the cognate races, but rather for geographical reasons. The Hamites were distributed to the south and west, and are thus the southernmost branch of the Ruddy races. It will, therefore, be convenient to begin on that side of the ethnic distribution which lies nearest to the lines marking the dispersion of the Black races, and thence to pursue the inquiry northward until the Hamitic movements have been exhausted. In the next place, the various branches of the Semitic family may be taken up and considered in like order, leaving the Aryan, or Indo-European, divisions of mankind, most important of

Hamitic races lie nearest the Blacks in race distribution.

all, historically considered, for the concluding chapters on distribution.

Historical reasons for the migrations of the Hamites.

The historical circumstances which gave rise to the first departure of the Hamitic emigrants from Lower Mesopotamia for the southwest are not known. It is not unlikely, however, that the pressure of the stronger Assyrians on the north, who by repeated invasions and conquests reduced the old Chaldæan empire to a condition first of dependency and then of actual subversion, may have been the occasion, if not the real cause, of the first migratory movements of the Hamites in the direction of Arabia. It is not known whether this primitive impulse was coincident with the Chaldæan ascendency in Lower Mesopotamia or subsequent thereto, but the former supposition is more in accord with right reason and with such other facts as bear upon the question. At any rate, the first dispersive migration of the Hamitic family was from the primitive seat of the Chaldæans toward the south and into the maritime parts of Arabia.

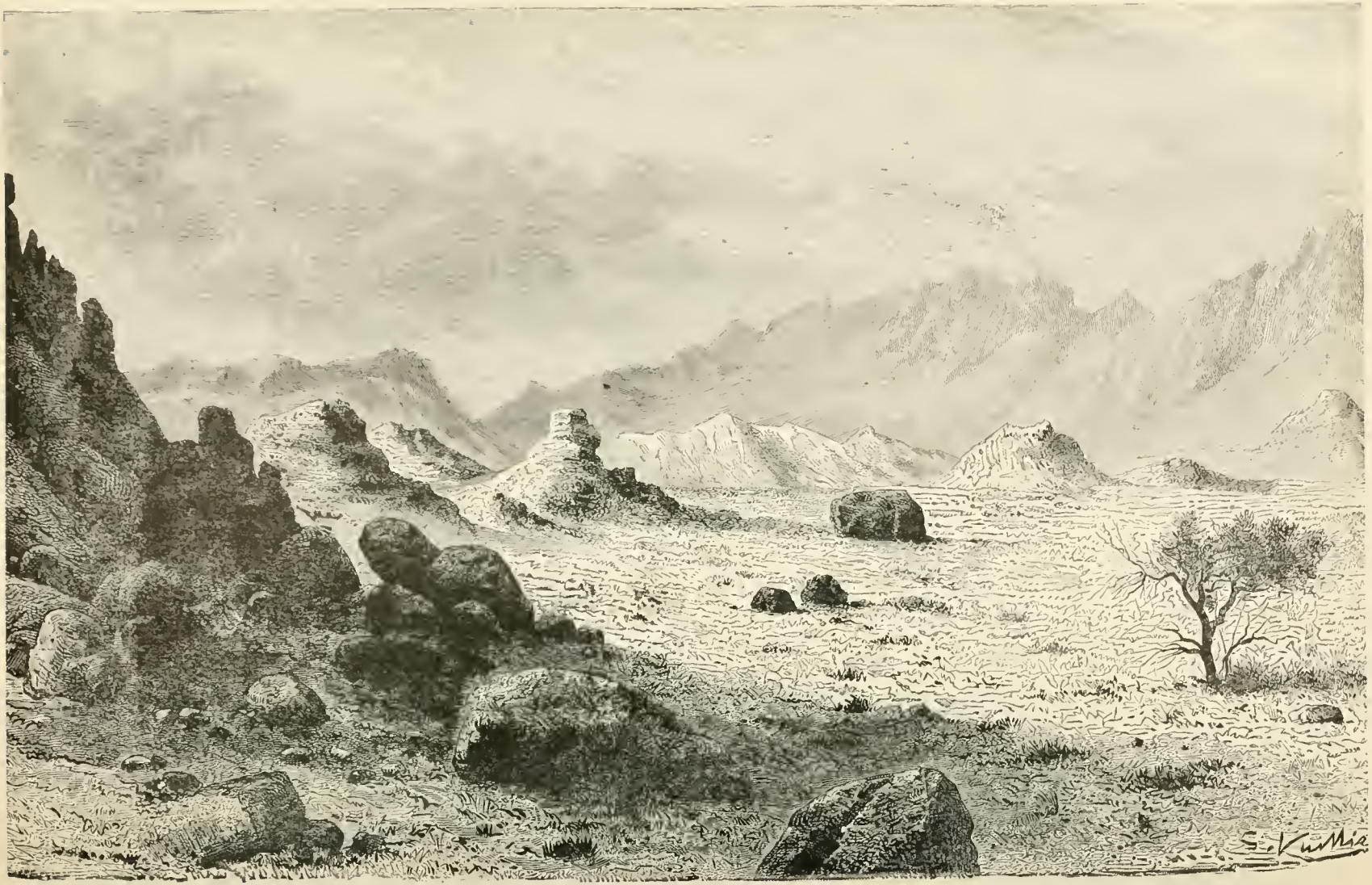
Primitive Arabian population of Hamitic descent.

It is likely that the first progressive people in the Arabian peninsula were the descendants of the migratory movement here described, and that they belonged to the maritime parts adjacent to the Persian gulf. The primitive Arabians of the eastern parts next to the sea were of Semito-Hamitic origin, and that they antedated the Central and Western Arabians may be safely inferred from the ethnic movements then prevailing in the world, and also from an old preference of the early races for the seashore and the regions adjacent. A glance at the geography of the peninsula will show a range of mountains between the modern Arab state of Hasa and the great desert. It was through the strip of territory lying between these mountains and the Persian gulf that the earliest tribes of the Hamitic family made their way to the southwest. In the lower part of the peninsula the migration divided, throwing off one branch into the modern province of Oman, while the major division was deflected somewhat in conformity with the coast line to the southwest, toward the modern state of Yemen, adjacent to the strait of Bab-el-Mandeb. Such in general was the direction of the oldest ethnic line in the Arabian peninsula, and it was from this primitive migration that the Old Arabs, as contradistinguished from the more recent Ishmaelites, were derived. The former were, in general terms, a maritime people, and to the present day the distinctions between their descendants and the Arabians of the regions bordering on the Red sea are sufficiently marked.

Himyaritic writings show traces of Hamitic production.

Throughout the whole of Southern Arabia, especially toward the southwestern termination of the peninsula, are found linguistic traces of this ancient people. A class of primitive writings, called *Himyaritic Inscriptions*, testify unmistakably of the presence of a peculiar people in the regions where they are found. These writings, generally engraved on stone, have been one of the most interesting and puzzling studies presented to modern students of language, and there has been great diversity of views in regard to classifying the original speech to which these writings belong. Many most eminent linguists have regarded them as of a Semitic origin. Another plausible view is that of Renan, who holds that the inscriptions in question differ too widely from Arabic and cognate varieties of Semitic speech to be classified therewith.

These facts open a question of much



LAND OF THE JOKTANIANS.—Mountain View in Hasa and Camp near Hail.—Drawn by G. Vuillier.

importance respecting the affinities of the Hamitic and Semitic languages. It appears that the linguistic separation of these two races was never so complete as the division of either of them from the Aryan families of the north. It is likely that in manners, institutions, language, and laws the primitive Hamitic tribes held together with their Semitic kinsmen until common linguistic forms had been in a considerable measure fixed in each, from which circumstance considerable similarity would appear in the subsequent development of the respective languages. On the whole, it is safer to classify the Himyaritic inscriptions with the other Semitic dialects, and to admit the influence of the Hamitic Arabs in giving particular features to the writings of Southern Arabia.

Affinities and connection of Hamitic and Semitic languages.

Wherever the inscriptions in question may be placed in linguistic classification, it is certain that their origin is extremely ancient, and that they were deduced geographically from Lower Mesopotamia. The line of these writings has been traced from about the junction of the Euphrates and the Tigris all the way around through Southeastern and Southern Arabia to Yemen, and even across into Africa. The explorer Loftus found a sandstone slab covered with Himyaritic inscriptions in one of the mounds of Warka, in ancient Chaldæa. Two specimens of gems covered with like characters are preserved in the British Museum. Coghlan and Playfair made similar discoveries at Amran, near Sana. In short, the identity of the writings along the line of the extreme southern dispersion of the Hamites is clearly established.

Wide distribution of the Himyaritic inscriptions.

The Himyarites, as a people, occupied the southwestern extremity of the Arabian peninsula. They are nearly identified geographically with the inhabitants of the modern Yemen, though the Himyarites were further south and more maritime than the modern Arabic state. It will thus be seen that the Hamitic branch of mankind which we have been tracing was brought, in its southwestern migration, to the southern neck of the Red sea. It was not likely that so narrow a strait of water would prevent the further dispersion of the ancient stock. The opposite African shore is embraced in the small maritime districts called Samara. More generally, it is Abyssinia to the north and Somaliland to the south.

Geographical position of the ancient Himyarites.

The fact has long been recognized that there was an ancient race identity between the peoples inhabiting the countries on the two sides of the strait of Bab-el-Mandeb. The belief that the Old Abyssinians were of Semitic derivation, and the knowledge that they were of the same race with the people of the Himyaritic district in Arabia, has led to the conclusion that the latter were Semites, and this belief has been perpetuated by the discovery of strong Semitic traces in the Himyaritic writings. The Abyssinians and other ancient Ruddy races of this region of Africa were clearly in some sort of race affinity with the Egyptians, the Canaanites, and the Old Arabians, as well as with the Semites proper. The whole question clears up on the hypothesis that this most southerly division of the Noachite descendants was Semito-Hamitic, and that the Semites proper were dispersed toward the south about to the center of the Arabian peninsula. It is true that some ethnographers have carried the Ishmaelite migration southward along the eastern shores of the Red sea to the

Race kinship of Southern Arabs and Eastern Africans.

strait, and thence into Africa, which would bring the Semitic tribes into the same country with the cognate Hamites, but it may be doubted whether the true line of Ishmael was ever carried so far in that direction.

Distribution of Hamitic blood in Eastern Africa.

If we attempt to trace the Hamitic dispersion beyond the crossing into Africa, we shall find the migration pursuing the same general course to the southwest which it had taken while in Southern Arabia. It appears that the peoples of this stock were thinly distributed from the bearing divisions of the Black races. The ancestors of the Hottentots and the Negroes made their way from the east through this same region of Gallaland, and their migratory intersection with the south-bearing progress of the Hamitic family must have constituted one of the earliest, if not, indeed, the very first, contact of the Ruddy with the Black races of antiquity.

Meanwhile Syria, almost directly west from Chaldæa, had also been preoccupied by Hamitic tribes. While the movement into the maritime parts of

DESERT COUNTRY OF THE SYRIAN BORDERS.—THE PLAIN OF TORTOSE.—Drawn by A. de Bar, from a photograph by Lockroy.

strait of Bab-el-Mandeb, in the general direction of the Victoria Nyanza, and that the westward progress of the Hamitic race was finally checked in this region. The Somalian peoples of the extreme eastern portion of Africa were doubtless derived from a deflected branch of this Semito-Hamitic migration; and, in general, the Noachite races of Gallaland had the same origin.

Crossing of the ethnic lines in Gallaland.

One peculiar feature of this African distribution of the Ruddy peoples from Arabia was the fact that the lines of their progress to the southwest into the continent must have crossed the westward-

Arabia had been going on, another division of the Hamitic stock had made its way out of Mesopotamia to the west. It appears that this migration divided in the desert country on the Syrian borders, one branch being deflected into Western Arabia, and the other pursuing its direct course toward the sea at Suez. If we take up the first division, we shall find the line of its dispersion drawn through Southeastern Syria and thence in the direction of Medina and Mecca. There can be no doubt about the race descent of the original peoples of this region. They were prior to the first Semitic mi-

Syria is preoccupied by Hamitic immigrants.

grations or invasions of the west; and the aboriginal substratum of the more recent Ishmaelites and Joktanians was undoubtedly of Hamitic origin.

Divisions and resultant plantings of the migration.

It was the peculiarity of the westward course of the Hamites from Central Mesopotamia that they divided north and south in their progress. At first, the volume of national life which flowed off toward Syria contained the potency of the Western Arabs, the Canaanites, and the Egyptians. The Canaanitish deflection from the main migratory line was northward, and occurred in the region of Central Syria. The northward-bearing branch from this point entered Canaan Proper and Phœnicia; and here began the development of one of the most prominent divisions of the Hamitic family.

Ham founds Canaan; Hebrews disparage their kinsmen.

Traditional Canaan takes its name from the son of Ham. In the chronicles of the Hebrew race this division of the Hamites is most prominent. They were greatly disparaged by the early annalists of the Hebrew race, and through all subsequent ages were despised and contemned by them as gentiles and servants of servants. It was against these descendants of Canaan in their tribes and generations that the wrath of invading Israel was turned, after the Egyptian exodus.

Extent of Hamitic migrations into Asia Minor.

The progress of the Hamitic migrations to the northwest, around the eastern extremity of the Mediterranean, introduces the inquirer to one of the most difficult passages in the ethnic distribution of mankind. The problem is *the extent* of the migration in the direction of Asia Minor. Ethnographers are not agreed as to how far the Hamitic movement in this direction continued. One class of writers are of the opinion that the traces of this branch of the human family extend no further than the southern regions of Asia Minor, or, at most, the eastern borders of the Ægean sea. Some are of opinion that the line was deflected into the island of Cyprus, and there terminated so far as its westward progress was concerned. Still another class of inquirers hold that the Hamitic progress extended westward through the Ægean archipelago and into Southern Greece. This view of the case makes the Pelasgians, to whom considerable space was devoted in a chapter of the preceding book, to be the descendants of the Hamitic stock. It will be remembered that the view of a northern, that is, a Thessalian, origin for the Pelasgic race was advanced in the former account of that people. This view of the case is not fully established. Nor can it well be said that the opposite opinion, namely, that the Pelasgians came from the archipelago into Argolis, and thence continued their progress to the West, is more than tentative.

Winchell's views regarding the European dispersion of the Hamites.

Winchell, in his *Chart of the Progressive Dispersion of Mankind*, holds to the view that the Hamitic migration was carried through the southern parts of Asia Minor, and thence by the Cyclades into Peloponnesus. From Southern Hellas this distinguished ethnographer extends the Hamitic line first into Northwestern Greece, where, in Epirus, as we have seen, one of the principal Pelasgic developments occurred. But the main line is carried across the Southern Adriatic into Italy, whence one branch is turned to the left, to furnish an aboriginal stock for the island of Sicily, while the other line bifurcates on the two sides of the Apennines, giving in Central Italy an origin for the prob-

lematical Etruscans and their primitive development. It may be possible, even probable, that this scheme furnishes the best solution as to the race-origin of the first peoples of the Ruddy race in Southern Greece and Central Italy. If so, we may regard the valley of the Po, the inland region of Etruria, and the remote parts of Sicily as the westernmost limits of the European excursion of the Hamitic race.

ROUTE OF THE HAMITE MIGRATION, NEAR SUEZ.—Lake Timsah.—Drawn by Dom Grenet.

We now turn to the central progress of the same race to the west. From Syria, the Hamitic movement continued directly through the isthmus of Suez into the valley of the Nile. It has been believed by some historians that the invasion by which the aboriginal Egyptians were expelled from their country was carried, in part at least, across the Red sea into Central, or even Upper Egypt. But a better view of the whole subject shows that if any such race movement occurred it was of a later, and perhaps a Semitic, origin, from Arabia into North Central Africa.

The race enters and occupies the Nile valley.

The original occupancy, then, of the Nile valley by the Ruddy races was certainly by the incoming of the Hamites, first into the eastern delta, and thence southward along both banks of the river to Upper Egypt. The progress of Hamitic civilization from the vicinity of Memphis and Cairo southward to its extreme limit at Elephantis has been traced by ethnographers and historians until its course and character are no longer doubtful. The oldest occupation was in that part of the delta lying next to the isthmus, and from hence the progress of the race was constant until the whole valley was populated by tribes of a common descent.

The account of the original dispersion of mankind may well pause at this point, that the attention of the reader may be once more called to *the extreme antiquity* of the movements here described. It is worthy of special note that the civilization of Egypt tended, in virtue of its own character, to transmit better evidences of time-relations and the succession of events than that of any other country. One of the fundamental ideas of the civilization created in the Nile valley was architectural grandeur, and closely connected with this was the notion of perpetuating the records of human life by means of colossal tombs and imperishable inscriptions. Fortunately the granite quarries of the country, especially in Central Egypt, gave opportunity to gratify this disposition, if indeed the presence of such materials did not first provoke the habit. The peculiar priestly organization of the race, in close union as it was with the secular dynasty, also tended to the creation and preservation of records.

Extreme antiquity of ethnic movements here described.

From these circumstances the great antiquity of Egypt became a marvel to the earliest historians and travelers of other races. No doubt the Egyptian scribes profited by the credulity of the age in which they flourished, and enlarged as much as possible the ancient records which they possessed. When Herodotus came into the country, about the middle of the fifth century B. C., he was shown the records of the old dynasties, from the founding of the first by Menes down to the reign of Seti. From this scheme he made up his estimate of the antiquity of the nation, producing as a result something over 12000 B. C. as the epoch of Menes. Four centuries afterwards, when Diodorus traveled in Egypt, he also studied the records of the country, and made out the founding of the first dynasty to have been more than twelve thousand years before the common era. According to Manetho, a native historian, the span between Menes and our era is reduced about one half, the accession of the first dynasty being fixed at about 5706 B. C.

Old travelers marvel at the age of Egypt.

The mediæval historians did nothing with the question, but in recent times many learned inquirers have taken up the subject, and the result has been the almost concurrent agreement of modern scholars that the epoch of Menes, founder of the oldest dynasty, goes back to the year 3892 B. C. This date is now accepted as approximately correct. Indeed, it appears to be rather within than beyond the true limits. Meanwhile a fact in astronomy has thrown perhaps the strongest light on the true era of the founding of Egyptian nationality. By the rate of the great movement called the precession of the equinoxes, it is now known that the equator of the heavens accomplished on the ecliptic a complete circuit in about twenty-five thousand years. It is also known that a certain star, which was polar at the time of the building of the oldest pyramids in Lower Egypt, has been, at the present time, turned by torsion just about one fourth of the way around the circuit of the heavens. This would imply the lapse of a little over six thousand years since the construction of the first pyramids; and the date indicated would be somewhat more than four thousand years before the common era.

Modern inquiry fixes approximate date for Menes.

It is safe to fix upon this date as a fair approximation for the time of the incoming of the tribes and the beginning of the great architectural era of the Hamitic race in Egypt. And it will be

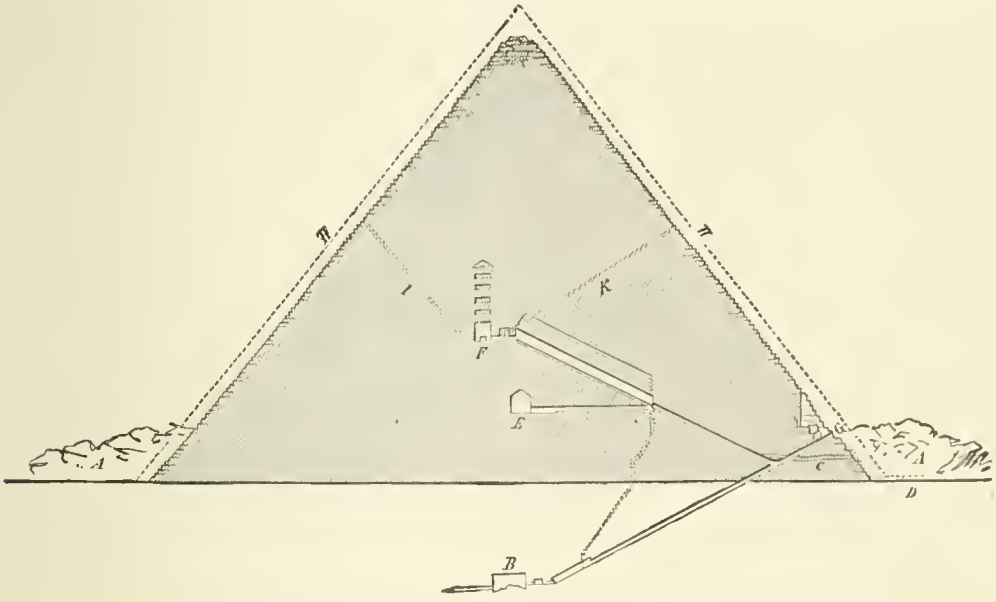
remembered that the ethnic movements which have furnished the subject-matter of the preceding paragraphs belonged to *a still earlier period* in the history of the race; all of which facts tend most strongly to emphasize the necessity of a great extension and widening out of the whole scheme of ancient chronology.

It is difficult for one removed to modern times and distant countries to realize the nature and method of the ethnic migrations of antiquity. It is not purposed in this connection to attempt to depict the actual manner of tribal removal from place to place to final settlement. One great feature, however, of the migratory progress of ancient peoples was the alternate speed and cessation of the movement. Sometimes the migrating horde would pour along like a swift stream, traversing in a short time vast stretches of country. Such was the rate of progress in desert regions and in mountainous districts where the means of subsistence were scattered and hard to obtain. But ever and anon this rapid volume of the moving race, most rapid in the vanguard, would flow into a region which, from its geographical situation and its fertility, would invite to settlement. Here there would be a pause. The tribe would spread over the surface of the country like a lake of water running into an inclosed lowland.

True nature of primitive tribal migrations.

For a long time the incoming tribes would pour along and discharge their volume into the reservoir. If the situation were sufficiently auspicious, there would be, in a short time, the beginnings of a national development. The more conservative elements of the tribes would establish themselves on the soil. Hunting would give place to the pastoral pursuit, and the pastoral pursuit to agriculture. Permanence would assert itself, and vacillation cease. Institutions would soon be planted. Architecture and the other practical arts would arise, and society would emerge from the tribal chaos which had preceded it.

In what manner favored localities become populated.



VERTICAL SECTION OF THE GREAT PYRAMID FROM SOUTH TO NORTH.

A, débris; B, vault; C, passage of entry; D, abutments; E, chamber of the queen; F, chamber of the king; G, ancient entrance; H, primitive facing of granite; I, K, ventilators.

Into such situations, however, a restless element is always poured, along with the calmer varieties of humanity. This radicalism would first flow to the furthest—generally the western—limit of the locality. Ere long, dissatisfied with the situation and longing for the old tribal freedom, these elements would burst away from the restraints of the civilizing communities and resume the migratory habits of antiquity. They would draw after them all adventurers, all the unprosperous parts of the half-formed societies behind them. They would strike out into new regions, driven by an impulse which they had no disposition to understand or check.

The radical element breaks away from the conservative.

We may conceive that ancient Egypt furnished one of the most striking examples of this *débouchure* of tribal waters. Here they were gathered, and here, out of the fecund soil, the elements of primitive life drew at first the means of subsistence and afterwards of development. How long the general progress of the Hamitic race to the west was checked and hindered by the outspread of the incoming volume in the valley of the Nile, it were, perhaps, vain to conjecture. For many centuries, no doubt, the outline was sufficient, and the auspicious character of the valley for succeeding ages appeased and satisfied the cupidity and restlessness of the immigrants.

Egypt a striking example of the ethnic sack.

In course of time, however, the more nomadic elements of Egyptian life climbed the western slope of the valley, and found the sand waste of Africa before them. Migration was resumed, and the first line of the new movement was stretched along the Mediterranean in the direction of Barca. It may be safely affirmed that the first tribes which were dropped into permanence in the country west of Lower Egypt were the ancient Marmaricans. It is well known that in after times Cyrenaica was colonized by the Greeks, but the primitive people whom they expelled from the coast and forced back into the interior were the descendants of the ancient Hamitic exodus from Egypt.

Migration at length resumed through Northern Africa.

The main line of migration continued to the west, branching into the interior south of the modern Greek colony, and also turning into the peninsula toward Ptolemaïs. When we consider the geography of Northern Africa we shall find the country well adapted to the maintenance and perpetuation of such a movement. Throughout the whole extent of the region, from Egypt to the Atlantic, a mountain range of greater or less elevation defines the coast region from the desert to the south. Toward the eastern terminus this range is of slight elevation, being in the plain of Barca no more than a thousand feet in height. Toward the western extreme the peaks of the Atlas rise to a much greater elevation, reaching the line of perpetual snow. Throughout the whole extent the range approximates the sea, and the country between the mountains and the Mediterranean slopes down rapidly to the level of the ocean. It was through this region that the African Hamites made their way to the west, through Barca and Tripoli, into the ancient state of Africa Proper, and thence into Mauritania, and finally to the extreme west.

Branchings and turnings of the Western Hamitic dispersion.

This region, thus peopled in the prehistoric ages, became one of the most important of the subsequent historical countries. The ancient states along the southern shores of the Mediterranean

never attained—with the exception of Egypt—the power and importance of those situated on the northern coasts, but they reached a considerable degree of development, and were able to compete with the Mediterranean peninsular powers for the mastery of the west. Fundamentally, the people of the North African provinces were Hamitic in their origin. It is true, as we shall see hereafter, that parallel streams of a different race descent were at a subsequent time led westward through the same region. But the Brown race division of mankind carried its migration toward the Atlantic on the *southern* slope of the North African mountains, while the Semitic stream flowed still further to the south. It may also be noted that the seafaring Semitic Phœnicians who passed westward through the Southern Mediterranean skirted the coast of Africa, and touched the islands rather than established colonies or built states on the mainland.

Rank and character of North African states and peoples.

TUNISIAN COAST.—Gulf of Hammamet.—Drawn by Eugene Girardet, after a sketch of Saladin.

The main stream of Hamitic migration may be said to have reached its terminus with the Atlantic, or at least with the islands west of Morocco. It is believed that the original tribes inhabiting the Canary islands were the westernmost dispersion of the human race, so far as the Hamitic migration from the east was concerned. As a rule, the Hamites no-

The Hamites venture by land, but avoid the sea.

where took to the sea. They were a land people, and while preferring the coast regions of the ancient world, they avoided the open ocean and formed very few insular settlements. They had far less dread of the perils of the desert than of those peculiar to the deep. An examination of the movement of the race westward through Northern Africa will show a much greater number of tribal departures toward the south than toward the north. The inviting character of the Mediterranean islands seems to have appealed less strongly to the people of this descent than did even the desert wastes of Sahara.

It is possible that the Hamitic movement, considered as a whole, was somewhat determined by latitude and temperature. The race appears to have had a preference for the southern climates. If we consider the central line of migration from the original seat of the race to its extreme western limit in the Canaries, we shall find only one or two considerable developments toward the north. The whole expansion of the Hamites was in the direction of the equatorial regions. If we allow the Pelasgians and the Etruscans to have been of this descent, we shall find this single stream to have attained a northern limit of a little more than forty-five degrees, in the valley of the Po. Otherwise, the northernmost deflections were scarcely above thirty-five degrees north. The main line of westward population was about the parallel of thirty degrees, and from this line nearly all the departures, both in Asia and Africa, were to the south and southwest. From the main course, the various tribal migrations into the regions of the equator and their ramifications filled a considerable portion of the old countries from the Persian gulf to the Atlantic south of the thirtieth parallel and north of the equator. None of the Hamites crossed the equatorial line southward in their original dispersion, the nearest approach thereto being made by the Galla tribes of Eastern Africa.

Hamitic preferences for the equatorial trend.

Among these various lines of southern deflection, the two principal were, first, the great Cushite departure into Southeastern Arabia and Eastern Africa; and secondly, the West African division, which left the parent stem on the borders of the Libyan desert, in the modern state of Algeria. From this point the secondary current turned to the southwest into the Moorish states and again divided in the Sahara, one stream continuing the original course and the other bending back toward the east, forming a loop whose southern line reached nearly to the parallel of twenty degrees north. It was thus that the aboriginal population of the Moorish and Berber states was supplied. Here sprang the desert people of the African waste, and from this source have been derived at least a majority of all the Berber, Tuareg, and Imoshag nations.

The Berber races result from deflected movements.

In following the course of the Hamitic progress toward the Atlantic, the ethnographer meets some peculiar difficulties. The ethnic classification of the Carthaginians has been the source of much perplexity; and there are even yet unsolved elements in the problem. By language and many of their institutions the ancient Carthaginians seem to have been closely allied with the Semitic races of the Orient. Tradition has distinctly and emphatically assigned to them a Phœnician origin. Many ripe scholars have not hesitated to classify them as Semitic.

Ethnic place of the Carthaginians considered.

In the first place, it must be remembered that the institutions and languages of the Hamitic race were by no means clearly separated from those of the Semites. Linguistically and institutionally, as well as ethnically, these two branches of the human family appear to have hung together until the forms and characteristics of each had to a considerable degree become fixed by development. The selvages, so to speak, of the various Hamitic and Semitic migrations lay together and overlapped each other in a measure that could not be expected in the case of the Aryan nations. For these reasons, identities and analogies of language and of institutional forms of both public and private life are abundant between the earliest Hamitic and Semitic nations. The Phœnicians were doubtless in the first place Hamitic in their origin. With the Semitic conquest of Canaan, that race became dominant to the sea. To what extent they were modified in their Phœnician development by Hamitic Canaanites it were impossible to tell, but doubtless the more recent Phœnician character was in its ethnic origin the product of both elements.

Institutional and linguistic intimacy of Semites and Hamites.

Moreover, in this region, the common forms of the two races were especially abundant. So if we consider the Phœnicians in the act of colonization in the west, as at Carthage, we shall find them planting on that shore *a mixed race* in which the oldest blood was Hamitic, and the more recent Semitic, in its derivation. Again, the later commercial relations of the Phœnicians brought many of their merchants and not a few Eastern institutions into the mart of Carthage. If, then, we look at the Carthaginian state, particularly at the city, in the time of its ascendency, we shall find a people marked in all of their civic and private life with the unmistakable traces of Shem. But it need not be

Semitic influence prevails over the Hamitic at Carthage.

HAMITIC TYPE OF THE UPPER NIGER—BAMBARRA.
Drawn by Riou, after a sketch of Valliere.

forgotten, at the same time, that the westward progress of the Hamites along this coast must, almost of necessity, have furnished the aboriginal element and germs of all the states primarily

created between Egypt and the Pillars of Hercules.

Continuing the course of Hamitic migration in the west of Africa, we find the main line of progress passing to the south from the Moorish states across the twentieth parallel and into the more habitable countries of the Upper Niger. Here there was another bifurcation, the western branch reaching out to the coast and furnishing the original elements of the Fulah tribes of Western Guinea. This was the second extreme limit in westward extent of the Hamitic migrations, being almost as far in that direction as the Canary islands. The other branch of the race appears to have turned eastward in the lake region of the Upper Niger, and to have thence descended the valley of that river into the Sudan and as far east as the country drained by the streams which flow into lake Chad. It is likely that the Baghirmi nations, lying southeast of the lake just named, mark the remotest point to which the original impulse carried the race of Ham into Central Africa.

Extreme limits of Hamitic distribution in the west.

The whole course of the migration, considered from the standpoint of Lower Egypt, resembles a fishhook bending southward around the larger part of the desert region of the African continent and presenting an interior and an exterior line, the latter of which reaches back toward the country of the original exodus, about one half way from the western coast of the continent to the Red sea. The final distribution of tribes, by means of this great migration in the prehistoric ages, was in a region of Africa into which the Black races, coming from the east, had already been poured, and with which the Hamitic peoples have in all subsequent ages been intermingled, until it were difficult, if not impossible, in modern times to discriminate the diverse race elements in the peoples of this region.

Nature of the dispersion in African interior.

This, then, concludes the summary of Hamitic migrations in Southwestern Arabia and Northern Africa. No doubt all such movements are more clearly drawn, more definitely indicated, in discussions of the kind here presented than they were in fact. In the physical world nature abhors a line, and the same may be affirmed with emphasis of the movements and phenomena of the world of life. Of a certainty, tribes migrate from place to place. They flow here and there into favorable localities, and there possibly develop into nations. But the movement *is not so exact and logical* as it appears to be when viewed through the medium of description. There is, on the contrary, much that is desultory and irregular in the course of migration from one country to another. Much allowance must be made for delays and deflections, and still more for the intermingling of one tribe with another on the way. The incoming people frequently disperse themselves among the original inhabitants, and are mixed with them in the race development of the future.

Ethnic movements are not exact and logical.

In some cases the migration is more exact and definite, and in such instances the facts correspond more nearly to the concept of the movement as it is transmitted by description. In the case of the Hamitic dispersion over the countries to which we have referred in the current chapter, it must be constantly remembered that these people were not so different typically from their Semitic kinsmen as the latter were from the Indo-European races. From this source

General summary of the Hamitic migrations.

also much confusion has necessarily arisen in the attempted classification of these people by their ethnic affinities. But it is believed that, on the whole, the Hamitic race took in prehistoric times the general lines of distribution which are here indicated; that it was distributed first into Southeastern and Southern Arabia, then into the western portions of the same peninsula, and then into Canaan. From this position the lines of migration part around the Mediterranean north and south, the lower departure being into Egypt, and afterwards into Northern Africa. In the course of ages the movement continued to the west, along the southern shores of the Mediterranean, to the Atlantic, and was thence deflected to the south into the equatorial regions, and finally turned back into the desert wastes covering the central and north-central parts of the continent.

It is not intended in this connection to trace further the historical development of the various peoples who sprang up on the line of these migrations. That part of the work will be attempted in another book. For the present, we turn from this cursory outline of the Hamitic distribution of mankind to consider another of the great primitive races in its similar dispersion, first through a great part of the Orient, and afterwards into different parts of the Western continents.

CHAPTER XXVI.—MIGRATIONS OF THE SEMITES.

ROUGHLY considered, the great monarchies in the valleys of the Euphrates and the Tigris were planted and developed by people of the Semitic race. It was in Mesopotamia that the first striking evolution of this branch of mankind was manifested. This is said of civil and political expansion, and of the establishment of social and linguistic forms. It is here that ancient history finds its first great buttress against the unknown. If we look at the upper part of the valley, below the Armenian mountains on the north and the range of the Zagros on the east, we find a region in which Semitic elements followed their natural course of evolution and were unadulterated by foreign nations. In the south of Mesopotamia, as we have seen, there was a mixture with the Hamitic stock. But in the later Babylonian aspect of these nations the influence of the Hamites had waned to such an extent as to leave the Semitic races dominant throughout the whole region drained by the great rivers.

Mesopotamia essentially a land of the Semites.

We have already noticed the fact of the prevalence of this division of the race in the Tigrine and Euphratine valleys. It remains in the present chapter to take up the course of Semitic life and follow it on its migration into western lands. For a long time after their departure from the Mesopotamian regions the different branches of the traditional Noachite descent were held well together by the geographical environment. On the whole, the Semitic stock was central in its movement to the west. The Syrian desert was entered from about the middle of the valley of the Euphrates.

Central position of the race; the westward movement.

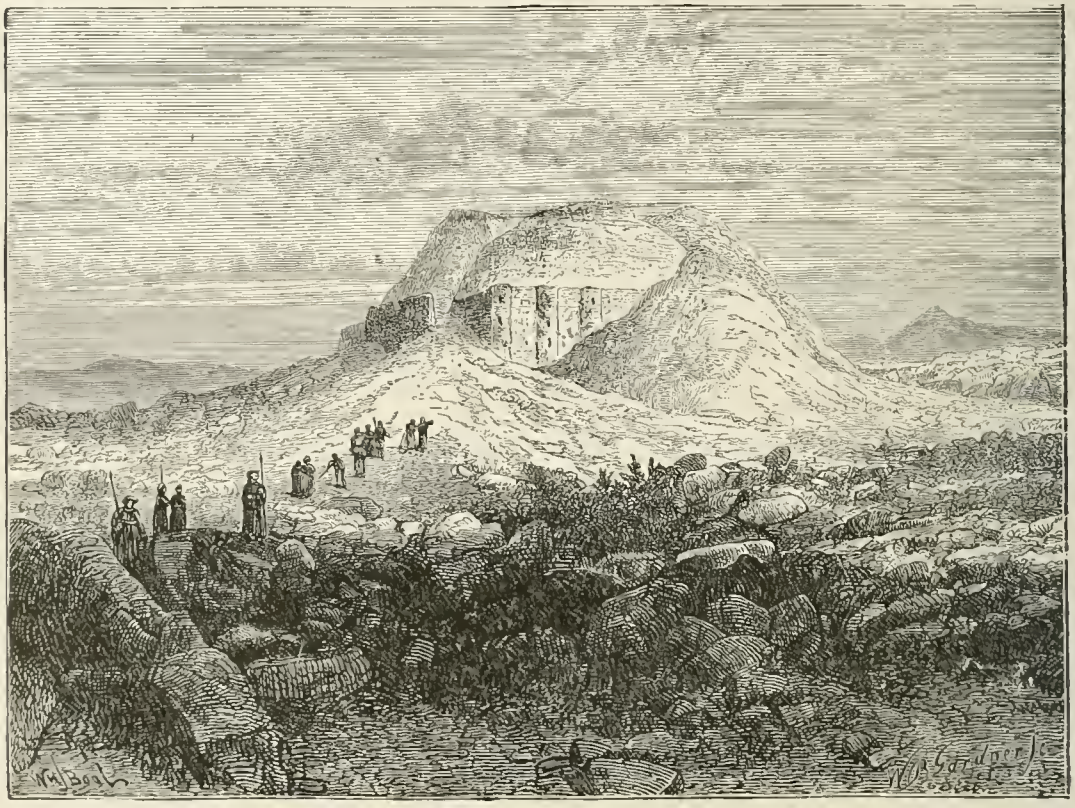
and was traversed by the migrating family directly into Canaan.

It is here, moreover, that the ethnographer, in his attempted delineation of the prehistoric movements of mankind, is reïnforced by tradition. One of the oldest and most authentic of these is the story of the migration of Abraham from Ur of the Chaldees into Canaan. This, viewed from the Semitic standpoint, is one of the most famous movements of the early world. The tradition of it exists among all the cognate races of the Hebrews, and with themselves it is the virtual founding of their race.

Tradition of the outgoing of the Abrahamites.

The position of Ur in Mesopotamia is well known. It is identical, in site at least, with the extensive ruins about six miles to the west of the Euphrates and nearly opposite its junction with the Shat-el-Hie. The place is called Mugheir, meaning "supplied with bitumen." The outline of a most ancient temple is still discoverable in the place; and the plan of the foundations, and indeed of the whole structure, has been made out by Rawlinson and other Oriental scholars. It was from this vicinity that the Abrahamic tribe took its way, first ascending the valley of the Euphrates for a considerable distance, and thence traversing the country into Canaan.

Place and character of Ur of the Chaldees.



RUINS AND PLAIN OF MUGHEIR.—Drawn by W. H. Boot.

All, or nearly all, the names that have been preserved to us of this period are significant of tribal movements. Eber, the ancestor from whom the name of Hebrew is taken, means "from beyond," that is, he was an emigrant from beyond the Euphrates, perhaps the

Special significance of the Semitic patronymics.

Tigris. The name of his elder son, Peleg, signifies "division," "because in his time the earth was divided." The name of Salah, the father of Eber, signifies "departure," and evidently refers to a title which that patriarch received in departing, or setting out, with his tribe for a new home. Everything pertains to migration. If the meaning of the name Arphaxad has not been ascertained, the position of his tribe at least is known. Arphaxad is a mountain district of Southern Armenia, between lakes

LAND OF THE ARPHAXAD.—View of Kopans Kale.—Drawn by T. Deyrolle, from nature.

Van and Urumiah; and there is no doubt that the primitive clan of this ancient Semite had its original locus at this place. Nahor, the son of Serug, means "the river," that is, the Euphrates—and so of scores of other proper names referring to Mesopotamian localities or to family or tribal movements in that region.

Contact of the Abrahamites with the races of Canaan.

The pastoral picture which is drawn in Genesis of Abraham on his way to the Promised Land, and of the troubles which beset him on his journey, of his contention with his kinsman Lot, and finally of his really serious battle with Chedorlaomer, or according to the Assyrian spelling, Kudur-Lagamer, is sufficiently striking and impressive. Kudur-Lagamer was king of Elam, or rather the Elamite king of Chaldæa, and had followed the Abrahamic tribe out of the East, with the hope of falling upon it and gathering great spoil. There is little doubt that this Elamite dynasty in Chaldæa was of Hamitic origin; and the departing Abraham was thus the object of race antipathy, as well as the possessor of flocks and herds. According to the Hebrew account of this migration, which was the origin of Israelitish greatness in Palestine, there was a division of the family which appears to have been on the borders of Canaan, about the time of the invasion. Ishmael, the oldest son of the patriarch, had married an Egyptian bondwoman and had become the head of a tribe. The troubles arising out of this heathen alliance led to a separation of the families, and Ishmael was carried off into the south, into Arabia.

Several generations before this time, however, another branch of the Eberites had already made a departure into Arabia. This movement was made by Iaktan, or Joktan, his elder brother being that Peleg who was the ancestor of the Abrahamites. Joktan was thus five generations before the patriarch of Israel. A large list of twelve sons and a daughter are assigned to Joktan as the heads of the tribes which he led off into Northern and Western Arabia.

Outgoing and plantings of Joktan in Arabia.

The movement was at a very early date. Joktan was the great grandson of Arphaxad, and the latter, as is well known, belonged to the extreme north of Mesopotamia, in the mountainous region of Armenia. So the Joktanites must have been strongly in the migratory spirit. Eber, the father, had come "from beyond." Salah, the grandfather, was the "departer." It is thus evident that the whole race of Arphaxad was in process of removal and migration.

Ethnographers, ancient and modern, have made out and identified several of the tribes having their origin in the Joktanian descendants. Ptolemy mentions the Almodœi dwelling in the central portions of Arabia Felix, and it can hardly be doubted that the name is derived from Almodad, the oldest son or tribe of Joktan. Another people called the Salapeni by the same geographer, are thought to have been derived from Shelcph, the second son of the same patriarch. This branch of the race was set down by Ptolemy as having its abode near the modern Mecca. A third division called the Cathramitæ were presumably the descendants of the third son of Joktan, named Hazarmaveth. It is likely that the modern provincial name of Hadramaut preserves the reminiscence of the original Semitic tribe by whom this region was peopled. There is also a modern tribe called Yarab, having its territories on the Arabian-gulf border and thought to have been descended from Jerah, the fourth division of the Joktanian progeny.

Modern traces of the ancient Joktanians.

The Semitic inhabitants of Yemen are believed to have descended from Uzal, sixth son of Joktan. The Himyaritic tribe, called the Dulkhelitæ, are believed to be the descendants of Diklah, the seventh branch of the original family. The tribe called Mali by Theophrastus, the Malichæ of Ptolemy, stand for the descendants of Abimael, the ninth Joktanian. The name of the modern town Malai, in the vicinity of Medina, preserves the same word. The tenth issue of Joktan was that Sheba, which is mentioned in the Hebrew writings and still more frequently among the local names of Southwestern Arabia. The eleventh Joktanian branch was called Ophir, and preserves another name famous in the Hebrew writings of the time of the kingdom of David and Solomon. It is believed that Havilah, a name common to one of the descendants of Ham, is represented by the modern Semitic people at Chaulan, in Arabia Felix. The tribe of the Iobaritæ, mentioned by Ptolemy, have their ancestral representative in Iobab, or Jobab, the thirteenth member of the Joktanian tribe.

The Joktanidæ make themselves names and races.

We thus see, with more than usual certainty, considering the extreme remoteness of the time, the outlines of a distribution of Eberites into Northern and Western Arabia. If we accept the extreme longevity assigned by the sacred writings to the patriarchs of this era, we shall find that the six generations between Joktan and Ishmael would cover a

Relations of the Joktanians and the Eberites.

period of thousands of years. However this may be, it can not be doubted that the Joktanians departed from the parent stem at a date much more remote than the more recent Abrahamites, and that when Ishmael, with the descendants of the Egyptian bondwoman, turned off into the "wilderness," he found already in Arabia Felix the half-nomadic and half-settled descendants of the older branch of the Eberite race. It will be borne in mind, however, that the progeny of Joktan, the younger brother of Peleg, would be displaced in rights and prerogatives by the descendants of the senior branch of the family; so that the Ishmaelites would have precedence in these regions as the representatives of the common father Arphaxad. The accompanying diagram will illustrate the tribal relationships of the descendants of the Joktan and the Ishmaelites:

Ishmaelitic migration was from the borders of Syria to the southwest and thence to the south, until the coast of the Red sea was reached, and skirted southward to the extreme limit of that body of water. If, as some ethnographers maintain, the Semitic race crossed at Bab-el-Mandeb into Africa, it was an Ishmaelite removal, and whatever elements there may be of Semitic descent among the Galla races of Eastern Africa, the same must be traced to Ishmael rather than to the Joktanian branch of the original Semitic family.

The western branch reaches the Imoshag in Africa.

In the course of their progress through the peninsula, the Ishmaelites appear to have divided east and west about the eastern border of Hejaz, and to have thrown off one branch toward the central desert and another across the Red sea into Africa. This latter movement of the race must not be confounded with

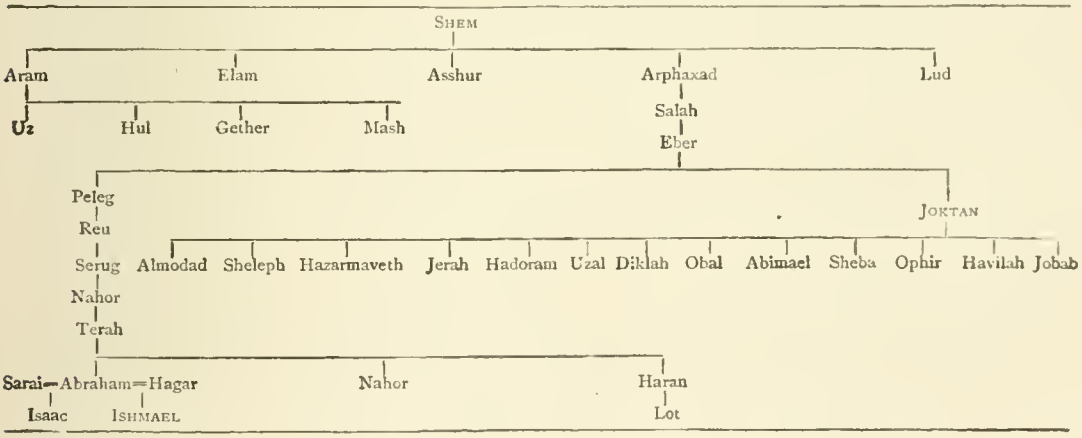


DIAGRAM SHOWING TRIBAL RELATIONSHIPS OF JOKTAN AND ISHMAEL.

Spread of the Ishmaelites through Arabia.

The career of the Ishmaelites in Arabia was one of aggression. They encroached, especially in the northern part of the peninsula, upon the older Joktanians and also upon the original Hamitic Arabians, who were anterior to both branches of the Semitic immigrants. In general terms, the course of the

the supposed one at the southwest angle of the peninsula. The real Semitic line was carried into the continent about the parallel of twenty-four degrees north, across Middle Egypt, and almost directly west into the Great Desert. The migration of the Ishmaelites in this direction appears to have extended as far as the Imoshag races, to the southwest of

Fezzan; and this point may be regarded as the extreme landward progress of the Semitic race south of the Mediterranean.

In general, the modern Arabs are regarded as the lineal descendants of the Ishmaelitic branch of the Semitic family. In the main, this opinion is verified by the facts in possession of the ethnographer and historian. But the Arab character is, to a considerable extent, composite. Several ethnic elements have contributed to its formation. The Hamitic race, especially in the southern part of the peninsula, underlay the national development of subsequent times. With this oldest stock was blended to some extent the Joktanian influence of later ages. Finally, in the north and west of Arabia, the immigrant Ishmaelites overcame and subordinated all the peoples that had previously occupied the country. The antipathy between Shem and Ham, however, was never great—except in matters of religious dogma and ceremonial. For this reason the original inhabitants, already a composite people in Arabia Felix, may be supposed to have contributed not a little to the ultimate formation of that type known in modern times as Arabian. But the dominant stock, at least in the important regions bordering the Red sea from Suez to Yemen, was Ishmaelitic in its origin and development.

Composite race character of the modern Arabians.

ARAFAT DURING A PILGRIMAGE (LAND OF OPHIR).—Drawn by D. Lancelot, from a photograph.

We have thus considered the southernmost migratory movements of the Semitic race. The Abrahamic tribe entered and possessed Canaan. This movement of the principal stock, representative of the family of Eber, is better understood in its character and results than any other single migration at a time equally remote from the present. The story is elaborately expanded in the Book of Genesis. All the principal episodes in the career of the Abrahamic tribe are narrated, even to details. The patriarch became the progenitor of a famous race which he planted in Canaan. The extent and variety of his tribe are indicated by the conduct toward him of Melchizedek, King of Salem, and by many other incidents and events. A great development of the immigrant race took place in the time of Israel, grandson of Abraham, whose twelve sons became the progenitors of the twelve tribes and the origin of the twelve geographical divisions of the rising race. It is not needed to recount the episode of the sojourn in Egypt and of the rapid multiplication of the foreigners about Pelusium. The return out of bondage and the repossession of Canaan by conquest furnished the material for the heroic aspect and story of the Israelitish nation, which became dominant from the borders of the Syrian desert to the Mediterranean.

Vicissitudes of the Abrahamites in possessing Canaan.

It is worthy to be noted in this connection that the Hebrews were never a seafaring people. It was against the economy of the state, and regarded perhaps as injurious to the theocratic principle upon which the government was founded, to make commercial excursions and contract relations with foreign powers. A student of history will not forget that the narrow strip of coast called Phœnicia, with its great seaports, lay between

LIFE OF THE ABRAHAMITES—SHEPHERD WITH LAMBS.
Drawn by Paul Hardy.

Noncommercial character of the primitive Hebrews.

Israel and the Western ocean. This fact has an ethnic signification also; for the Tyrians and Sidonians and other old stocks of mankind, hanging in their rookeries along the eastern end of the Mediterranean, represented races long anterior in their western distribution and development to the immigration and conquest of Canaan by the Eberites.

In course of time the Semitic stock became dominant to the sea. But the spirit of navigation which prevailed in the ports of Tyre and Sidon must be attributed to a race impulse other than that of the Hebrews. To the extent that the Phœnicians had accepted the institutions and blood of the invaders who conquered Canaan, we may regard the outgoing fleets from these shores as carrying Semitic influences through the Mediterranean. But it is doubtful if these fleets of outbound merchants carried to the western parts anything *distinctively* Hebrew. All the traces of the Semitic race which have been found in the Mediterranean islands, on the shores of Spain, and beyond the straits of Gibraltar, in Wales, and in the littoral islands of Western Africa, must be attributed to that community of language and institutions which the Phœnicians, particularly the Sidonians, possessed in common with the race of Abraham.

Extent of Hebrew influence on the Mediterranean.

Time and again we have shown that the Hamites had common forms of language and a common institutional development with the cognate nations of Shem, and the original Canaanites could thus carry into western waters evidences of a race affinity with the dominant Semitic stock. However this may be, ethnographers have agreed in extending the Semitic line of dispersion through the Phœnician coast and around the northern shores of Africa by water. As just indicated, this line extends beyond the Pillars of Hercules, and is deflected northward to Britain and southward to the twentieth degree of latitude. The western limit of this maritime migration is thought to have been in the Azores; and this group of islands may be said to mark the extreme Atlantic progress in the natural dispersion of the Semitic family.

The Azores mark the Atlantic limit of Hebrew departure.

It must be noted in connection with the foregoing schemes of dispersion that most of the names employed appear as the names of individuals— as the sons of a household. This fact gives to the discussion a strictly *family aspect* which is too exact and too narrow for the facts which it represents. Many of the names in the above classifications are known to be the names of tribes and of whole divisions, or even of whole peoples. It is impossible from a study of primitive Semitic records to make out precisely which of the ancestral names employed in geneological tables are intended to represent single ancestors, and which are designed to specify households, tribes, and peoples. It is the custom in the Semitic languages to prefix to many personal names, especially such as have a descriptive signification, the definite article, thereby giving to the word an ethnic turn of sense different from what would be expressed in the Aryan languages. Such names, moreover, are frequently in *the plural;* and the Hebrew Scriptures, taken as an example of all such records, have, in many instances, intermixed these tribal or ethnic epithets with individual names until even the closest criticism is put at fault in determining precisely what is meant. On the whole, it is safe to make considerable allowance for this circumstance in estimating the value of the names, apparently individual, given

Use and significance of Hebrew tribal names.

to the ancestors of the Semitic and Hamitic races. This fact must always be taken into account in attempting to estimate the *time* and the *extent* of a given migratory movement.

If we look to the north of the central line of the Semitic dispersion into Canaan and the west, we shall find only a single significant departure. This leaves the main stem on the north in the Syrian desert, and bears off in the direction of the northeastern extremity of the Mediterranean, where it touches the coast, and is thence carried over to the island of Cyprus. It is hardly to be doubted that along the line of this migration other peoples had preceded the Semites, and it has already been suggested that in Cyprus itself the aboriginal development was of Hamitic origin. The primitive history of the island is exceedingly obscure, but all that is known with reference thereto points to an early colonization by the Phœnicians from the neighboring coast. The ancient worship of Ashtaroth in Cyprus seems to be identical with the corresponding cult in Phœnicia, and it may be concluded that the first race, by which is meant the first progressive race, in the island was of the old Canaanitish stock which fixed itself in the earliest ages along the eastern shore of the Mediterranean.

The Hebrew branch entwines with the Hamitic in Cyprus.

Such, then, is the general view of the dispersion of the Semitic nations

"LAND OF THE SCORCHED FACES."—Abu Senoum, on Frontier of Kordofan, toward Darfur.—Drawn by Karl Girardet, after a sketch of Lejean.

Geographically considered, the race was narrow and intense. Its migratory excursions did not reach out so extensively as those of other peoples. The extreme western continental limit was, as we have seen, in North Central Africa. The southern departure dropped down as far as the limits of Arabia. The northern limit was the island of Cyprus; and the maritime expeditions—if we regard the Phœnicians as representatives of this race—extended through the Mediterranean and to a certain distance around the western coasts of Europe and Africa. Taken altogether, the dispersion is the smallest, that is, the most limited in geographical extent, of all the great ethnic departures. The dispersion of Japheth in comparison with that of Shem was, as we shall presently see, world-wide in its extent. But within the limited territories occupied by the Semitic race a very intense form of religious and civil development ensued, making the Semites conspicuous among ancient peoples for their peculiarities and persistence and force of character.

Summary and outline of the Hebraic distribution.

In the course of the current chapter little has been intimated relative to the primitive populations of Ethiopia. This name was given by the Greeks to the region lying immediately south of Egypt. The word means "the land of the scorched faces," and was doubtless applied by the Hellenic ethnographers to the Ethiopians on account of their swarthy hue. This, however, by no means implies that they were a branch of the Black races of mankind. It is well known, on the contrary, that this people were allied with the Hamitic and Semitic families of men, and not with the Negroes or Hottentots.

Question of the race derivation of the Ethiopians.

The early history of Egypt indicates close relationship between that country and Ethiopia. At one epoch an Ethiopian dynasty is found in the ascendant in the Nile valley. There was much community of religions and of civil institutions between the two peoples, who, however, frequently went to war. To what extent, in the prehistoric ages, the Hamitic race had made its way up the valley beyond the falls of the Nile and contributed a first population to Ethiopia can not be well ascertained. But that the original race of this region was at least to some extent Hamitic in its origin can hardly be doubted. We may, nevertheless, accept the current view of ethnographers that the western division of the Ishmaelites crossed the Red sea and gave a Semitic character to the first Ethiopian tribes. It is possible, moreover, that the same race, after making its way to the southern extremity of the Red sea and passing thence into Africa, doubled back into Ethiopia and disseminated certain tribal elements in this obscure but important region of the earth.

Western Ishmael combines therein with the Hamites.

We thus note three great divisions of the Semitic stock. The primary departure sent off the Aramaic branch of the race. In general terms the people of Aram, known ethnically as Aramæans, were distributed from the Zagros and Kebir Kuh on the east, to the borders of Canaan on the west. Aram embraced all of Mesopotamia except Chaldæa, subsequently known as Babylonia, and all of Syria in the west except Palestine and Phœnicia. The seat of Aramaic culture was Mesopotamia. Here was exhibited the strongest development of the race. Geographically, Aram was the northern division of the Semitic family,

Aram the seat of the strongest Semitic development.

as the Hebraic stock was the central and the Arabic division the southern evolution of Shem.

In considering the race characteristics and historical progress of these peoples, we shall have occasion to revert to this division of the Semitic family, and to make the same the basis of a discussion of the national life of the Mesopotamian nations, the Hebrews and the Arabs. We turn, then, in the next place, to a discussion of the far wider, and in many senses more important, development of the oldest branch of the Noachite family of mankind—the Aryans, or Japhethites.

CHAPTER XXVII.—THE EAST ARYAN DEPARTURE.

THE dispersion of the Japhetic, Aryan, or Indo-European race—for the three ethnic names are virtually synonymous — constitutes the most picturesque chapter in the prehistoric annals of the world. We are brought in the investigation to what appears to have been an inexhaustible fountain of human life, and are led to view the issuance from this common source of at least six of the great races which became in their development the principal historical forces in the ancient world. It will be of primary interest in this inquiry to note, first of all, the geographical location of this common fountain wherefrom issued the best, or at least the strongest, peoples who have, by their energy and genius, transformed the primeval world into its present civilized and auspicious condition.

Determination of the origin of the Aryan migrations.

With the map of Asia before him the student need not be long in fixing the great ethnic center which we are about to consider. Regarding the ancient country of Carmania as the seat of the Noachite division of peoples, and fixing the line of Japheth on the north, it may be easily perceived that its westward-bearing course would come against the Hyrcanian mountains and the Lower Caspian, and be deflected or doubled back toward the Upper Oxus into Margiana and Bactria. It was in this region that the great ethnic whirl was established, where the Aryan race seems to have found itself turned by torsion for a season under the dominion of cosmic forces, which it were, perhaps, vain to attempt to analyze and define.

Ethnographers have differed somewhat as to the true seat of the great races which we are now to consider. The better opinion places the center of the distribution about the Lower Caspian, or eastward toward the borders of Bactria. It is likely that the rapidly multiplying race covered geographically the larger part of the country between the Bactrian borders and the Lower Caspian. At least this is the general locality from which the most powerful ethnic forces have ever proceeded. In viewing the situation, we may discover once more how the laws of physical environment coöperated with the laws of instinct in producing such marvelous results. There is little doubt, in the first place, that evenness of surface and approximation to sea level have a marked influence in preserving the aggregation or compact-

Region of the Lower Caspian the point of departure.

ness of tribes in the formative state, and in conducing to certain religious and political types of development.

In the next place latitude, with its invariable concomitant of temperature, contributes much to modify the peoples who are subject to given degrees of heat and cold. This is true in particular of tribes who are still in the plastic state. There can be no doubt that there is a childhood and a youth to mankind—an impressionable stage of evolution in which the influences of the external world are more potent in their reäction upon the mental and physical constitution than they are in later stages of development. In these early stages of society there are infantine susceptibilities and diseases from which the race recovers at a stage of fuller maturity. For this reason the early peoples in their migratory epochs have developed a constitution peculiarly significant of the climate and region of their tribal sojourn. The races of Ham became much darker in color than their Semitic kinsmen. They also grew sedate and austere, less disposed to highly developed forms of society, and, in brief, more like the desert and rainless countries into which they penetrated than were the races which distributed themselves further northward.

Hamites are ethnically modified by environment.

Among the oldest monuments of the Egyptians there are pictorial representations of the differences which had already been produced among the Noachite descendants by the influences of environment. The sculptors, in these representations, have unwittingly borne evidence of the tendency of races in the plastic stage of their evolution to conform to climatic conditions. The Egyptians defined themselves as *Roth*, meaning red, or ruddy, as to complexion. They pictured the cognate Semites as *Namahu*, meaning yellow; and the Japhethites, or North Mediterranean peoples, as *Tamahu*, or white. Yet it is now well known that these three types of color and the associated form, feature, and stature of the three peoples to

Egyptian sculptures evidence the early differentiation of races.

LANDSCAPE OF OLD ARYA.—Ruins of Tous.—Drawn by A. de Bar, from a photograph.

which they belong, were all of a common ethnic descent.

Primitive Japhethites affected by climate and surroundings.

The race of Japheth on the north and east of Mesopotamia was, in its earliest stages of development, thrown into a region where nature *had greater variety* than in any of the countries where the Semitic and Hamitic families were dispersed. It was a region of uplands, rising easily into mountain ranges of considerable elevation. It was a country of snows, and particularly of storms in winter. There are few parts of the earth in which vicissitude in temperature and the whole external mood of nature are more pronounced than in the region south and east of the Caspian.

PASS OF THE ARAXES.

The primitive Japhethites were exposed from the beginning to the full force of these climatic changes—to the flush of early spring, the heat of summer, the quick oncoming of the storm, the biting frost of a comparatively early autumn, the high winds, the blasts of snow and sleet peculiar to the winter months. It is in some sense a climatic maelstrom, and the Japhetic race was whirled and beaten in its childhood by the wild elements that dashed and turned from alternate calm to tempest, and from warm airs to biting blasts and freezing sleets. For these reasons the early Japhethites would, by the turbulence of nature, be impressed with greater restlessness, hardihood, and adventure than might be expected in the case of any other primitive people.

How great must have been the influence of such an environment upon sensitive peoples recently liberated from a parent stock in a more genial latitude! We have already seen that the Adamite seems to have come up from the low-

lying seashore, where the Ichthyophagi afterwards roamed, half-naked in the seashore sunshine, gathering shellfish from the brine. Many of these moderating influences had been carried by the Noachites into the Carmanian uplands; and it was from thence that the Japhethites were deflected to the northwest into the region of snow and mountains.

Indefiniteness of biblical references to the Japhetic dispersion.

Before beginning a review of the wider aspects of the Japhetic dispersion into remote continents, it can but prove of interest to note, as we have already done in the case of the Joktanian migrations, the narrower biblical plan of distribution presented in the tenth chapter of Genesis. Japheth signifies, etymologically, "widespreading," from which meaning of the word the inference is drawn that the name was applied to the Northern Aryans *after* they had shown the migratory disposition. Far back in the Noachitic era there was a propheey that Japheth should be *enlarged*. Everything from the biblical point of view points to the expansion of this branch of the Noachite family. The close relation of the western division of the race with European tribes is shown in the fact that the Greeks had a myth of their own ancestor under the name of Iapetus, which is clearly the same as Japheth. In general terms, the countries assigned to the descendants of this branch of mankind are called the "isles of the gentiles." Doubtless the expression is poetical. The Oriental imagination substituted "isles" for countries in general, no doubt from the *remote* and seagirt meaning suggested by the word.

If we scrutinize carefully the Japhetic family as recorded in Genesis, we shall find seven sons, or founders of tribes, assigned to the head of the race. These are, first of all, Gomer. Among the descendants of this ancestor many names are found, even in Europe, which preserve the etymology of the ancestral title. Rawlinson has noted the presence of the Gimirians among the cuneiform inscriptions, belonging to the age of Darius Hystaspes. The Cimmerians, dwelling on the northern shores of the Black sea, are believed to have their name from Gomer. The word Cymri (Kymri), one of the Celtic names of Western Europe, is thought to have the same origin; and the words Cambria, in England, and Cambrai, in France, preserve, perhaps, an etymological tradition of the oldest branch of the Japhethites.

Seven tribes of the Japhethites; the race of Gomer.

The first son of Gomer was Ashkenez, from whom, no doubt, the ancient tribe of Ascanians, dwelling to the south of the Black sea, were descended. These are believed to have been the ancestors of the Phrygians, and were therefore closely related with the Hellenic emigrants who subsequently peopled Greece. The country of Ascania extended over the land of Troy, from which circumstance we may deduce something of the ethnic relations existing between the Trojans and the Hellenes. It is worthy of note that "the boy Ascanius," the son of Æneas, founder of mythical Rome, perpetuated the ancestral name of Ashkenez. It is not impossible that the classical name Euxine, formerly spelled Axenus, is also derived from the ethnic designation of the early race dwelling on the southern borders of this sea.

The second branch of the Gomerites was, according to Genesis, deduced from the tribal ancestor Riphath. From him are thought to have descended the ancient Paphlagonians, whom Josephus designates as Riphaces. This people,

Place of the Riphaces in the ethnic scheme.

like the Ashkenites, dwelt on the southern borders of the Black sea, though the location has not been so definitely determined as that of the first Gomeritic division. On the whole, it is likely that the Riphaces had their dwelling place somewhat toward the east, in a district which was properly included in Armenia. The third son of Gomer was Togarmah, who is believed to have founded an Armenian tribe which may be identified with the modern Thorgonites inhabiting the same region.

The next branch of the Japhethites was deduced from the second son, called Magog. But it is difficult to determine into which of the Black sea provinces this division was led and distributed. There is general consent that the famous savage race of Scythians were the offspring of Magog. Some ethnographers have referred the Turanians in general to this origin, and others have derived the Circassians, inhabiting the mountainous district between the Caspian and the Black sea, from the Magogian stock.

Distribution of the Magog and the Madai.

Concerning the Madai, who are recorded as the third tribe of Japheth, there can be little doubt that these were the ancestors of the great race of Medes, whose country spread from the Upper Zagros toward the east, as far as Hyrcania and the desert of Aria. Subsequently, in the development of the Median race, the nation spread southward over the Iranian plateau, and passed by conquest into Assyria, and even to Babylonia. But the prehistoric tribes descended from Madai were limited to the northern provinces east of the mountains.

The fourth son of Japheth was Javan, easily identified with the Greek ancestral name Iaones, from whom, according to the Hellenic tradition, the Ionians of Asia Minor and the Ægean islands were descended. Traces of the Javanites have been discovered among the inscriptions of Egypt; and the Greeks as a race were called Javanas among the ancient Hindus. The Arabic word for Greeks is Yunan, which is evidently of the same etymology with Javan. In later times the Hellenic ethnographers were disposed to accept Iaones as the ancestor of their whole race, and to make Ionian and Greek equivalent terms.

Traces of the dispersion of the Javanites.

From the Javan, several ancestral stocks are said to have been derived. The first son bore the name of Elishah, and it is

OLD MEDIAN TYPES—THE SASSANIAN PRINCES (OF THE SCULPTURES).
Drawn by H. Chapuis, from a photograph by Madame Dieulafoy.

possible that the Greek state of Elis, in the eastern part of Peloponnesus, perpetuated this name. Some have suggested that Hellas itself is a derivative from Elishah. Tarsus, on the Cilician coast, has been derived from the word *Tarshish*, assigned as the name of a second son of Javan. A third tribe was called Kittim, which is believed to have been distributed near Paphlygonia, or possibly into the island of Cyprus. A fourth division of Javanites were the Dodanim, which we may possibly identify with the Dodonians of Macedonia. The tribal name is sometimes spelled *Rodanim*, which would point to the island of Rhodes as the locality of this branch of Javan.

GATEWAY OF THE EAST ARYANS INTO INDIA—THE BOLAN PASS.

The race of Tibareni, mentioned by the Greek historians, have generally been referred to the Tubal, fifth tribe of Japheth. They have been identified with the original Georgians, but the name in itself does not indicate the descent. In the Iberians we may discover traces of the original name. The latter had their habitation bordering on the Black sea and reaching out on the southern slope of the Caucasus.

Probable identification of the Georgians with the Tubalites.

The sixth son of Japheth is called Meshech, whose descendants were doubtless the ancient Moschi. The territory of this tribe lay next to that of the Tibareni. The Moschian range of mountains preserves the word in the north of Armenia to the present time. According to a conjecture of Rawlinson, the modern national name of Muscovite is derived, through Moschi, from the Japhetic Meshech.

It is believed that the great Thracian stock of mankind may be traced up to Tiras, the seventh and last of the Japhetic progeny. It is thought that the country into which this branch of the race was distributed was on the north of the Black sea, on the banks of the Dniester, the name of which river is believed to preserve the etymology of Tiras. Afterwards the same geographical name was carried into Europe. The Thracians were originally distributed over a wide range of country, extending from the Black sea as far as the borders of the Cimmerians.

Possible derivation of the Thracians from Tiras.

It will be seen that according to this genealogical scheme, deduced from the Book of Genesis, the dispersion of the Japhethites was wholly to the *westward* from the point of departure. This indicates that the eastward migrations of the race, so important in the subsequent development of the Medo-Persian up-

Biblical scheme represents the Japhethites as developed westward.

lands and India, were unknown to the Hebrews, or at least omitted from the ethnic tables which they preserved. As a general fact, the Hebrew accounts of peoples other than themselves were limited to the necessity of the case, while the movements of the Abrahamites were expanded and developed in full proportions.

A second observation relative to the Japhetic dispersion is that according to this sevenfold tribal scheme all, or nearly all, the races of Indo-European origin are located in Armenia and around the shores of the Black sea. The territory contemplated by the Hebrew author extended westward into Phrygia and at least as far as the Ægean islands. It is safe to mark out the wilds of Thrace and the island of Rhodes as the westernmost boundaries of the Japhetic dispersion as deduced from the tribal references in Genesis. But if we examine the geographical knowledge which was possessed in the times of the composition of the earlier Hebrew books, and join to this the comparative indifference of the race to the movements and distribution of the Japhethites, we can discover sufficient reasons for the imperfection or inadequacy of the ethnic scheme. It now remains to look at the question in the broader light of historical and linguistic indications.

How far the Hebrew outline of Japheth extended.

It has already been indicated in the first chapter of the preceding book that the study of language has led to many rectifications in the general scheme of knowledge. In no other department of science has this correction and emendation of previous opinion been more manifest than in ethnography. One of the most striking examples of the improvement of the old scheme of learning by the new linguistic contribution is found in the discovery that the Indic peoples of Hindustan have certainly been derived from the same origin with the great nations of Europe and America. The bringing to light of the identity of Sanskrit in its elements as a language with the Greek and Latin opened up a totally different view of the movements and distribution of the Indo-European family of men. The slightly subsequent demonstration of the identity of the language in which are recorded the sacred writings of the Iranic or Persic race, added proof to proof of the great community of the six or seven branches which are now known to compose the Aryan family of nations.

Great contribution of linguistic science to ethnography.

Ethnographers were quick to seize upon these additions to their previous knowledge; and one of their first works was to trace backward the Indic streams of mankind through the passes of the Hindu-Kush to its confluence with the Iranic stream, and then to follow up the Old Indo-Persic family in its descent from an ancestral home common to themselves and the Græco-Italic stock in Europe. These ancient and shadowy movements, most important in the dissemination of the strongest peoples in the world, have now been sufficiently delineated, and the scholar of to-day may trace with comparative certainty the ethnic lines which mark the course of primitive peoples from the great center which they had in common, eastward of the Lower Caspian, to their several destinations in distant continents.

Discovery of Indo-Iranic affinities by means of Sanskrit.

The primary movement of the Old Aryans in the geographical vortex just referred to appears to have been a sort of spiral, throwing off streams east and west from its circumference. The oldest

First movements of races from the Aryan nidus.

of these departures was that toward the southeast. It contained the potency of two principal developments, an older and a younger; the former finding its geographical area of expansion on the table-lands of Iran, and the latter continuing in migratory movements to the east, until it descended from the mountain gaps into the Punjab, and thence down the Indian valleys to the sea.

The first peculiarity of this remarkable departure is the fact that it stands alone of all the Aryan migrations in having a general direction *toward the east*. All the other dispersive movements of this race were *to the west*, the tendency being in common with that of the Semitic and Hamitic families on the south. The Eastern Aryans, however, made their departure *against* the course of nature, and followed it persistently across nearly a third of Asia to their final lodgment and distribution in the East.

Hints of physical laws governing the movements of races.

The reason for this reversal of the general migratory movement to the West, and of the departure of the Eastern Aryans from what appears to be a common ethnic law, is difficult to determine. The earth is held in equipoise by the electric currents with which it is girdled and by which all its magnetic elements are polarized. These encircling influences, which are doubtless determined in their fundamental direction by the diurnal course of the sun, extend into and control all the vegetable and animal life on the surface of the planet. Every vine and tendril that springs from the earth and seeks a support twines around the object to which it fastens in obedience to a common law which determines the *method* and *direction* of the growth. No mechanical means or contrivance can prevail against this obvious and invincible tendency of a vine to turn in its own direction about the object on which it seizes. In general, the tendrils of the vegetable kingdom follow the course of the sun, from left to right in a circle. In the animal kingdom the same phenomena recur. Bees departing from the parent colony follow, in every country, a given line of migration. Birds and quadrupeds also obey these cosmic influences, but are somewhat more variable in the directions of their tribal movements. As we shall see further on, the Brown races of mankind have in general carried the lines of their migration to the *east* instead of the *west;* and the same is true of the Australian and Papuan streams of dispersion among the Blacks.

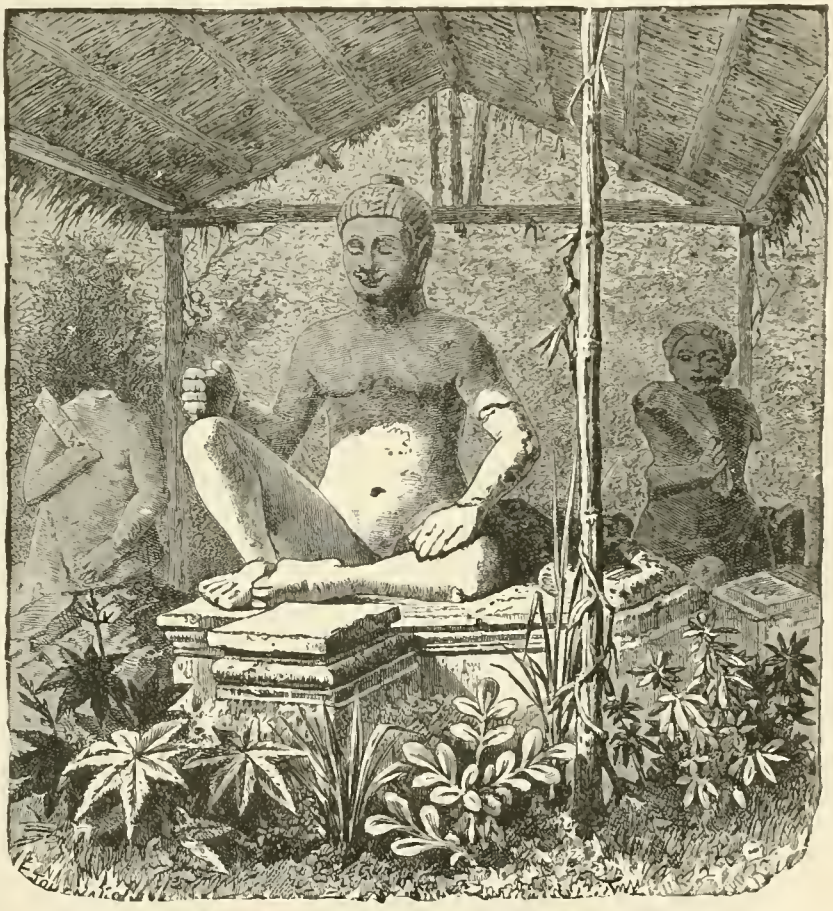
Possible reason for the direction of Indo-Persian migration.

But the Aryans have shown almost a passion for the westward course. All the original ethnic movements of this great division of mankind were toward the setting sun, with the single exception of that which we are now considering. Why should the Indo-Persian migration have disobeyed the general law? Why should the Ruddy race have contributed to populate the valleys of India at a distance so great from the original tribal departure? It may be said in answer, that the vegetable kingdom is not quite uniform in the directions of its growth. There are a few exceptional instances in which vines and tendrils are specifically opposed in their method of growth to the action of the common law, and when such reversal of the usual order is discovered in a given plant, it is found to be as obstinate in its manifestation as are those which conform to the usual methods of development. It is possible that something analogous to this may have prevailed among the Eastern Aryans to the extent of a prevalent instinct contrary

in its action to the usual desires and dispositions of the race.

At any rate, the first great migration of this family of mankind was toward the rising sun. The epoch in *time* in which the movement began can not be ascertained, but the *condition* of the migrating nation has fortunately been, to some extent, preserved in the language. The old books of the Iranic and Indic races have been to the ethnographer what the stone-leaves of the earth are to the geologist. There are even to be discovered in these works some hints of chronology. It is now conceded that the Rig-Veda is the oldest book in the possession of the human race. It may be that investigations hereafter among Orientals, particularly the Chinese, may substitute some other work for the Hindu Bible. It is now generally admitted that the earliest hymns of the Vedic collection go back to wellnigh three thousand years before our era. The sacred books of Zoroastrianism were compiled at a later date. The evidence of language is sufficient to show that the Iranic speech and religious institutions were developed at a period considerably subsequent to that from which the Rig-Veda proceeded. It is possible that the hymns and ceremonials composing this most ancient book were sung or chanted by the Aryan tribes long before they descended into the valleys of India. It is certain at least that the language was well forward in evolution of structure and determination of vocabulary while the Iranians and Indicans still drifted in a common migration toward the south and east.

Light derived from Iranic and Vedic literature.



TYPE OF THE ANCIENT BRAHM—LEPER KING OF ANGCOR WAT.
Drawn by E. Tournois, after a sketch of Delaporte.

The distribution of the Indic peoples, first into the Punjab and afterwards into the lower valleys, thence into the uplands, and finally eastward to the foothills of the Himalayas, has already

been described. It was here that the great race of Brahm expanded through centuries of progress into that fixed national form which we discover in the earlier epochs of authentic history. Here the Brahmanic form of worship prevailed. Here the Indian castes were established in society. Here those peculiar philosophical theories of life and duty and destiny were evolved which seemed to be an exact reversal of the beliefs and dogmas of the Western nations. It will be the work of a subsequent chapter to trace out this easternmost development of the Aryan peoples, to note its peculiarities and tendencies, and to contrast the life of the Hindu peoples with the more aggressive and active social phenomena exhibited by the primitive races of Europe.

Expansion of the race of Brahm in India.

In the case of this migration we have another example of the disposition of primitive tribes to hang together and maintain their solidarity for a considerable distance toward their unknown destination, and then to depart into two or more courses of independent development. While the Indic branch of the eastward-bearing Aryans had been making its way farther and farther toward the Indian valleys, the Iranic division gradually spread from the common movement and turned into the half-desert plateaus on the south. The movement was first into Media Proper, and then into Persia. The course of this branch of the race, which may be defined as Indo-Iranian, appears to have been almost exactly the reverse of that of the original Ruddy stock making its way north and westward from the shores of the Indian ocean.

Primitive tribes hang together in the migratory movement.

It is not the purpose at the present time to note in extenso the establishment of the Median tribes and their organization first into a political community and then into a kingdom. It is well known that the Medes preceded the Persians in the formation of a body politic and in the development of the arts. We are here, however, on the borders of history, and pass, for the present, from the eastward dispersion of the Aryans, to note the still wider and more significant distribution of the race into the westernmost parts of Asia and thence into Europe.

The Medes precede the Persians in historical development.

CHAPTER XXVIII.—THE WEST ARYAN MIGRATIONS.

IT is clear from the evidence in possession of modern scholars that there was an attempt on the part of the original Aryans to make their way around the eastern shores of the Caspian and thence westward across the Ural river; and it is also clear that this movement did not succeed. The migrations in this direction reached no further to the north than the sea of Aral, where the course of the tribes was permanently checked. It is more than likely that the climate in this region was so severe as to prevent further progress in that direction. The country between the Lower Ural and the Aral sea is one of the bleakest and most forbidding in the world, and Aryan adventure was stayed in this direction.

In these facts we discover another example of the peculiarities of migratory tribal movements. Ethnic progress is by no means so rapid and exact as the word *migration* would imply. These north-bound Aryans, if they had been "emigrants" in the modern sense of that word, would have continued their course around the Caspian to the north, and would have found an ample vent for westward expansion afterwards. But the movement of primitive tribes is a *progress* rather than a *migration*. The removal from place to place is slow. It involves camping, temporary settlement, and a test of the locality as to its resources and suitableness for permanent abode. The ethnic movement is thus tentative in its whole course. It puts out in this direction and in that, testing the climate and the resources of the region, and spreading into different tracts adjacent until the course of further migration is determined by the inviting or uninviting character of the borders beyond. There is a sense in which the migrating tribe is always *tempted* to proceed on its way in a given direction. The imagination is allured to the extent of inciting a new departure. While the natural instinct of the race, in the form of cupidity or the spirit of adventure, furnishes the bottom impulse of the progress, the suggestions of the natural world determine its course and the rapidity and oscillations of the forward movement.

Sense in which "migration" is to be understood.

The north-bound migration which we have here described, and which ended with the Aral sea, contributed an aboriginal race between the Oxus and the Caspian. Here a single Indo-European family is represented which doubtless owes its origin to the very primitive movement just described. The Karakalpacks, whose territory lies immediately north of the Atrek river, which empties into the Lower Caspian from the east, are probably of Aryan descent.

KARAKALPACK TYPES—TWO USBEKS.
Drawn by A. Ferdinandus.

Northern limits of Aryan dispersion in Asia.

as are also a second tribe, called the Usbeks, who have their habitat further to the north; also the Tadshiks, holding the country immediately south of the sea of Aral, at the *débouchure* of the Oxus, are Indo-Europeans, and are the northernmost of the Aryan peoples of Asia eastward of the Caspian sea.

the Caucasus. Defined in terms of ancient geography, the course was across Media, through Atropatene and Armenia Major. In all this region—such was its geographical constitution—the migratory race appears to have held together. Indeed, it was not possible that there should be dispersion in a country

CAUCASIAN TYPES.—GEORGIAN WOMEN.—Drawn by Eugene Burnand, from a photograph.

In the meantime a still stronger migratory movement of the Aryans had taken place directly to the west. The stream of departure in this case carried in its current the potency of all the European nations. It extended primarily south of the Caspian along the upper parts of Mesopotamia, and was held from northern deflection by the spurs of

Sources of the race movement into Europe.

so confined. All of the ancient states which we have just mentioned were strongly Aryan in their original population, from which circumstance it is easy to discern how Aryan influences would press upon ancient Assyria from the east and modify that nationality by the infusion of many foreign elements. The modern countries of Mazanderan, Ardalan, and Adarbijan hold a similar rela-

tion to the Mesopotamian regions, and the pressure of the Kurds upon the peoples between the Tigris and the Euphrates has in progress of ages amounted to a conquest.

After reaching the more open region midway between the Caspian and the Black sea, the Aryans divided into two major streams, one continuing the westward course, and the other passing through the Caucasus mountains into Armenia. It is at this point that the line of departure to the right enters the Russian empire of modern times.

First races planted on the lines of the outgoing.

The first peoples of Aryan stock deposited in the region of this divergence were the Armenians and Georgians. Here is the seat of that great division of mankind to which the ethnographers of the last century gave the name of *Caucasian*. Until the more comprehensive scholarship of recent times had thrown a stronger light on the question, it was supposed that the White, or Ruddy, races had all issued from this source, the southern branch passing into Asia Minor, and the northern being carried around the Black sea into Europe. It is now seen, however, that the real origin of the Aryans lay further to the east, and that the starting point of dispersion in the Caucasian region was only secondary to an older departure beyond the Caspian.

Origin of the Minor Asians; Hamitic influences.

It will be desirable in following out the great migrations which we are now to consider to take up first the western branch of departure and follow the same into Asia Minor, and thence into peninsular Europe. If from the eastern extremity of the Black sea to the northeastern limit of the Mediterranean a line be drawn, we shall find that all of the original peoples of peninsular Asia lying west of the line and east of the Black sea were contributed by the principal stream of Aryan migration to the west. This movement entered the peninsula centrally from the east and was distributed into all parts, especially around the southern shores of the Black sea. The only exception to the ethnic distribution here stated is the possible Pelasgic line of the Hamites, carried around from Syria into the archipelago. Otherwise, all of the prominent nations who, out of prehistoric shadows, came into view with the beginning of authentic history in Asia Minor were of a common Aryan descent, and this descent was immediately from the point in the Caucasus where the primitive races of Northern Europe took their departure into Great Russia and the West.

Multiplicity of ethnic plantings in the Lesser Asia.

The Aryans, once in Asia Minor, found themselves in a region inviting to development. The result was that in the earliest ages of history many states were created within a comparatively limited territory. Kingdoms and empires that even contended with the great powers of Mesopotamia arose in several parts of this Lesser Asia; and if the country had been as fortunate in the preservation, by literature and monuments, of the story of its past as were the states of Assyria, Egypt, and Greece, we might expect some of the most striking contributions to the ethnography and annals of primitive times. It will be fitting in this connection to notice a few of the leading peoples who were developed from the Aryan stem in the country between the Black sea and the Mediterranean.

If any of the nations within the limits here defined belonged, in whole or in part, to other than an Aryan stock, it was the Cilicians, lying at the extreme

east of the peninsula and along the Mediterranean border. The physical features of this country are the Taurus mountains and the river Cydnus, both famous from the remotest ages for their historical associations. The belief is prevalent that the Phœnicians were first to colonize these regions, and it is quite likely that their adventurers and seamen passed around the coast and established settlements as far west as Lycia. To the extent that the Phœnicians had as the basal element in their race character an element of Hamitic descent, it will be proper to regard the Cilician race, especially of the seacoast provinces, as descended from the southern branch of the Nonachites. But subsequently the incoming Aryans gave another complexion to the people. Cilicia was Aryanized, and remained ever afterwards virtually an Indo-European state. In the times of Hellenic colonization the Greeks sent around maritime bands, who settled along the Cilician coasts, and thus completed the race revolution which their ancestors had begun in prehistoric ages.

Place and race composition of the Cilicians.

North of Cilicia lay the still greater country of Cappadocia. The primitive race inhabiting this region was contributed directly from the Aryan migration westward. Indeed, the region lay immediately in the path of the great movement, and the people sprang up from the elements which were dropped by the race on its progress toward the Black sea. The same may be said of Paphlagonia, lying in the inner curve of that sea on the south. We have already seen that these countries were assigned by the Hebrew account to the sons of Japheth. Paphlagonia is believed to have belonged to the Kittim of the Japhetic dispersion, while the same country is by other writers assigned to the Riphaces, descendants of Riphath, the second tribal head of the Gomerites.

Beginnings of Cappadocian and Paphlagonian races.

Immediately west of Cappadocia lay the still more important country of Phrygia, with its northern peninsula next to the Propontis. This region also lay immediately under the center of the migratory line, and the primitive population was distributed in the manner already described for Cappadocia. The political power subsequently developed in this part of Asia Minor was of great importance in the earlier historical times. The state was touched on its various borders by Bithynia, Paphlagonia, Cappadocia, Lyconia, Pisidia, Lycia, Caria, Lydia, and Mysia. It was the center of the Lesser Asia. The country of which we here speak was called Greater Phrygia, to distinguish it from the extension of the same region along the Propontis, which was known as Lesser Phrygia.

Rise of the Phrygians; their kinship with the Armenians.

According to the traditions of the various races of the peninsula, the Phrygians were the most ancient nation of Asia Minor. They were thought by the Greeks to be in close race affinity with the Thracians. There are also hints of their relationship with the Armenians on the east. Both of these conjectures of the ancients were correct. The Phrygians were the result of a migratory movement out of Armenia into the countries of the West, and the people were accordingly allied, by race descent, on the east with the Armenians, and on the west with the Thracians. It is not the place to review the important historical bearings of Phrygia in the earlier ages of Grecian history, or to repeat the traditions and legends which have been preserved of the nation.

South of Phrygia lay the smaller states of Caria, Lycia, and Pisidia; and to the

north, on the shores of the Black sea and reaching to the Bosphorus, was the country of Bithynia. All of these districts were peopled by tribes who were dispersed right and left from the original Aryan migration which brought the ancestors of the Europeans to the eastern borders of the Ægean sea. Immediately west of Phrygia, next the archipelago, was the important state of Lydia. The history of the people who were here developed is better known than those who grew into importance further east. The Lydians were nearly allied to the Greeks. The Ionian cities were on the Lydian coast, and the commercial relations between the peoples on the two sides of the Ægean were from the earliest ages intimate. The Lydians were to the Ægean sea what the Phœnicians were to the Eastern Mediterranean. In the arts and sciences they antedated the Greeks, and their history is only second in importance to that of the Hellenic states.

Other Minor Asians; Lydians in particular.

ROUTE OF WEST ARYANS THROUGH ASIA MINOR.—Pass of Hadjin, in Cappadocia.
Drawn by Grandsire, after Langlois.

We have thus noted the westward progress of the Aryans through the whole country from Upper Mesopotamia to the Ægean sea. This region of Lesser Asia presented one of the earliest fields of Aryan development. While the Medes and Persians on the east of the Zagros, and the Indic Aryans in the Punjab, were laying the foundations of their respective nationalities, the

Minor Asians contemporary with the Iranians and Indicans.

various peoples of Asia Minor, all closely allied by race descent and common institutions, were settling from the nomadic state into permanent residence, discovering the native resources which were richly distributed in their country, and creating those institutional forms out of which great monarchies, rivaling those of the valley of the Euphrates and the Nile, were to spring and flourish.

Reasons for the different streams of Hellenic migration.

It is probable that the westward progress of the Aryan race was considerably delayed by its course through Asia Minor. The richness of the country in resources, the fertility of the soil, the abundance of the forests which prevailed in prehistoric times, the acceptability of the climate, and the general beauty of the landscape invited to residence; and here the migratory and adventurous spirit would be checked. It was only after the peninsula began to be well filled with the immigrant race, when the nations began to contend and displace each other by conquest, that the old migratory impulse revived and progress toward the west was continued. These circumstances may account for the fact of *the different streams of migration* which appear to have discharged their volume into the Hellenic peninsula.

Race progress through the Cyclades into Hellas.

With the resumption of the movement to the west from the shores of Lydia we have the picturesque episode of a race crossing the Ægean by means of the archipelago. The Cyclades are generally within easy sail the one of the other, and the passage of a primitive people would be easy. The gradual spread of Phrygian and Lydian adventurers into these waters presents an aspect of dispersion quite as unique as it is poetical. Some ethnographers maintain that the incoming of the Hellenic race into Hellas Proper was by means of this island progress across the Ægean, while others hold that the true Hellenes dropped into Greece from the north, out of Thrace, whither they had drifted out of Lesser Phrygia, across the Hellespont.

Principal migratory route by way of Thrace and Thessaly.

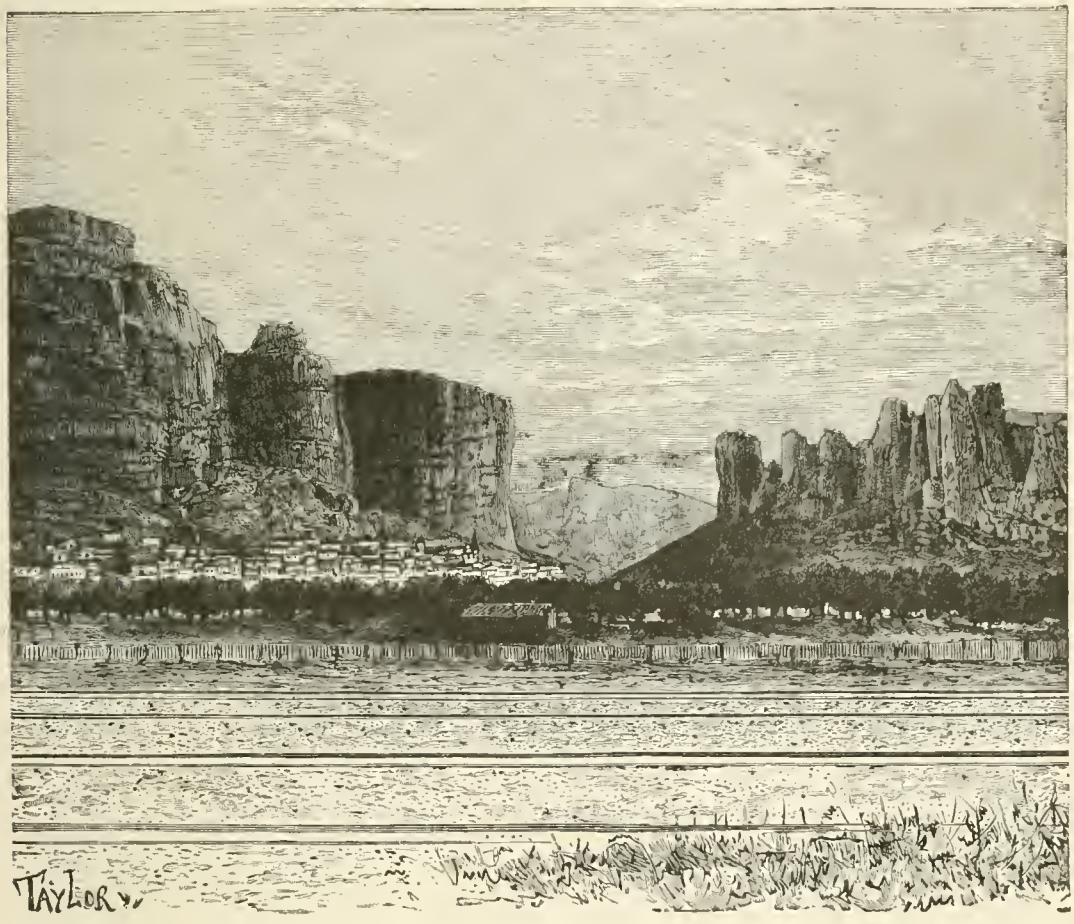
Perhaps the truer view would be to ascribe the Hellenic peoples to both of these origins. Several kinds of evidence point unmistakably to the conclusion that the Hellenes were out of Phrygia. The Greeks themselves, though many of them held to the mythological opinion of an earth-born, or autochthonic, origin, recited the legend of a northern descent, and it is almost certain that a majority of the incoming tribes descended out of Thrace through Thessaly, where they had found a footing and partial development, after their migration from Asia. But that the general progress of the Aryan peoples was continued out of Asia Minor across the Ægean archipelago into the mainland, thus making the two streams confluent in the Hellenic peninsula, can hardly be doubted.

Ethnic restlessness of the Graikoi; meaning of the name.

Great was the restlessness of the early races in Greece. They were, perhaps, the most turbulent tribes of whom history has made a record. Ages elapsed before permanence of settlement was attained. They were ages of myth and adventure. The gods were mixed with the men, and the Titans stood between. It now appears that the older name of the people was in their own language *Graikoi*, a term which the immigrants had evidently applied to themselves with a view to distinction from more barbarous peoples. The word Graikoi, which subsequently, in the Latin form of *Graeci*, became the designative of the

Hellenic race among all peoples, signified old, or honorable. It was thus very nearly equivalent to the Latin *senator*. Aristotle declares that ancient Hellas was the country about Dodona and Achelous. "Here," he adds, "lived the *Selloi* and the people then called the Graikoi, afterwards the Hellenes." Thus itself the elements which were afterwards to be distributed in Italy and to become the germs of the Italic, or Latin, race. The exact shape of the migration in this respect is, of course, unknown. It is sufficient to allege that the migratory wave out of Asia carried

The Greek migration contained the potency of the Italican.



ROUTE OF THE GREEK ARYANS INTO HELLAS.—Pass of Kalabaka, Thessaly.—Drawn by Taylor, from a photograph.

it appears that the Greeks, in course of time, rejected the older national name and substituted Hellenes as the title by which they would be known among the nations.

We may here pause to anticipate what will appear in a subsequent part of the present chapter; that is, that this Greek, or Hellenic, volume of tribal life flowing into Hellas contained along with the potency of both the Greek and Latin peoples. The uncertainty is as to which foreran the other. It is possible that those tribes which were destined to plant themselves in Italy were the vanguard of the whole movement. Again, it is possible that the Celts of the extreme west went before the Latins, but the likelihood is that the Celtic stem was bent around from the north of Eu-

rope and did not cross by way of the peninsulas. It is possible also that the prehistoric Greek and Latin stocks held together as far west as the Hellenic peninsula, from which point the Latin branch continued its course to the west. It is sufficient to know that the name Græco-Italic, designating the whole stock, is appropriate as descriptive of its ethnic character, until the two peoples were differentiated and distributed into their respective countries.

Linguistic hints as to priority of Greeks or Romans.

Students of language have been curious to inquire into the relative antiquity of the two races as determined by their respective dialects. It is a remarkable fact that the evidence points *both ways*. There are parts of the Greek grammar and vocabulary which are manifestly older than the corresponding parts in Latin, and, on the other hand, there are Latin constructions and words which are just as clearly of a higher antiquity than those of Greek. Thus the preservation of the ablative case in Latin points to the retention of a form of grammar which had died out of the more recent grammar of the Greeks. *Sumus*, the first person, plural, of the verb *to be*, is much more nearly identical with the Sanskrit *asamas* than is the corresponding *esmòn* of Greek; that is, *esmòn* is the more recent grammatical inflection. On the other hand, the retention in Greek of the dual number in nouns and of the middle voice in verbs indicates an older grammatical structure than that exhibited in Latin grammar, where no such nominal and verbal inflections exist. Likewise, the much more complete evolution of the Greek verb, considered in its entirety, and of the adjective, with its one hundred and thirty-five inflectional blossoms, shows a closer alliance with the full tables of the older Sanskrit than the narrower and later forms of Latin. There is, however, nothing really paradoxical in this seemingly contradictory testimony of language as to the relative age of the two races; for it is easy to perceive that *in some respects* the Greek tongue might preserve the older forms, while in other peculiarities Latin would retain the ancient structure and vocabulary less impaired by time and migration than in the corresponding linguistic development of the Hellenes.

Rise of the system of ancestral mythology.

Early in the mythical age, the incoming tribes superimposing themselves upon the Pelasgian peoples already in the peninsula, ceased to designate their race as Graik, and took up a sort of ancestral mythology, which they ever afterwards zealously disseminated. The story ran thus: The ancestor of their race was the immigrant hero Hellen. He was the son of Deucalion and Pyrrha. He led his tribe into Hellas after the Deluge. Hellen had three sons, Dorus, Æolus, and Xuthus. Dorus became the founder of one race and Æolus of another, while the two sons of Xuthus, Ion and Achæus—like Ephraim and Manassah, sons of Joseph, in the Hebrew scheme—rose to equal rank with their uncles, Dorus and Æolus, and became the heads of the Ionians and Achæans. It will be noticed in this table of family dispersion that the name Ion reäppears, recalling the Hebrew Javan and also the Hindu name Javanas, which occurs in the *Laws of Menu*, and is thought to designate the Ionians. This legendary account of the origin of the principal Greek races was accepted by the credulous Hellenes as an ample and final explanation of their origin and diversities of national development.

Historically considered, the Hellenes present two great branches of race

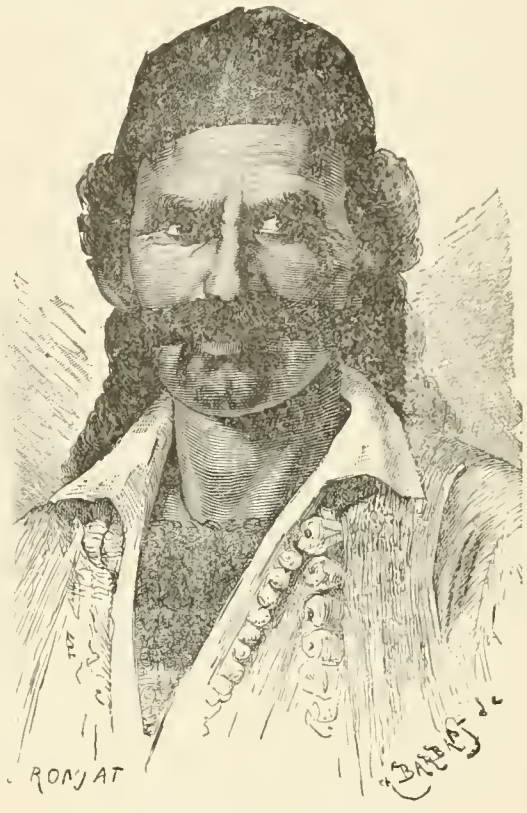
evolution: the one Dorian, and the other Ionian. These two are separated from each other by such marked characteristics as to distinguish them in all epochs of Greek history. The Æolian tribes do not appear to have diverged greatly from the common ancestral type. The term Æolian may well be regarded as discriminative of a number of partly developed Greek peoples dwelling in the northern part of Hellas, particularly in the plains of Thessaly. With the jostling of the other races from their original seats, however, the Æolians became more distinct as a people. When the Dorians possessed themselves of the Peloponnesus, the Æolians passed over to the northwest coast of Asia Minor and established there a confederation of cities under the name of Æolis. They also populated the islands of Lesbos and Tenedos, from which insular seats the Æolic dialect of Greek spread into other regions, and left behind some scanty specimens in Hellenic literature.

Place and characteristics of the Æolians.

The Æolian was the least important development of the Hellenic race. The Dorians were far more powerful and famous. Their native seats in the peninsula appear to have been between the ranges of Olympus and Ossa. At one period they invaded Macedonia and took possession of a part of the country, but were afterwards expelled. They established themselves in the island of Crete, and made the little state of Doris the seat of their power until the so-called "return of the Heraclidæ" carried them into Peloponnesus. Here they became predominant, and were the virtual founders of the powerful states of Sparta, Argos, and Messenia.

Evolution and race character of the Dorians.

It was from this epoch in their development that the Dorians became so strongly discriminated in their character from the other Hellenes. They became austere, rough in manners, and laconic in speech, to the extent of transmitting their name to all after times as a synonym for the peculiarly selfish, stoical, and indifferent character which they presented in their own age. Even the architecture which they cultivated retained unmistakable traces of the simplicity and severity of the Doric race, and the same may be said of that variety of Greek which they spoke, and out of which the dramatists, especially the tragedians, of the literary age were prone to draw those archaïc and rude forms of versification peculiar to the Greek tragical chorus.



MODERN ACHÆAN TYPE—ODYSSE.
Drawn by E. Ronjat, from a photograph.

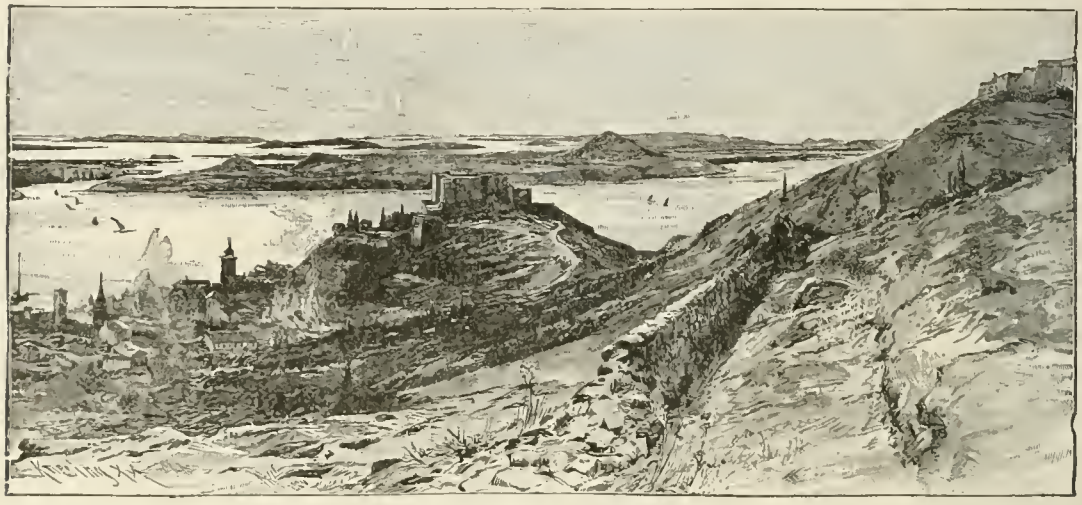
Ancient Ionia was on the coast of Asia Minor, between the rivers Hermus and

Mæander. The adjacent islands of Chios and Samos were included with this dependency. How far the Ionians, or Javanites, had been distributed along this shore before their migration into European Greece can not be stated with certainty. The country above defined was determined in its limit after the return of the Ionians, in later times, and their resettlement in the region of their ancient home. Here it was that they founded the Ionian confederacy of twelve states or cities called the Dodecapolis.

Situation of Ionia; the Dodecapolis.

It remains to note the geographical situation of the Achæans. It is believed that in the heroic age Mycenæ, Argos, and Sparta were peopled by tribes of Achæan descent. This race also extended into Thessaly. Indeed, the latter country is thought by ethnographers to have been their original seat, whence they migrated into Peloponnesus. The importance of this branch of the Greek race was greatly lessened in the time of the Hellenic ascendency. In the Homeric age the leadership of the Achæans was constantly recognized, and in the *Iliad* their name is many times employed as a synonym for the whole Greek host engaged in the Trojan War. They appear, however, to have been lacking in the elements of intellectual greatness. In the later epochs of Greek history the term Achæan sank from its old heroic sense into a name of contempt. But it is of interest to note that, geographically at least, the relative importance of the race was acknowledged by the Romans, who, on their conquest of Greece, gave the name of *Achaia* to the whole province.

Rank and relations of the Achæans among the Greeks.



ROUTE OF THE GR.ECO-ITALICANS.—Sebenico, on the Dalmatian Coast.—Drawn by Charles W. Wyllie.

Many of the most important maritime towns of the fifth, fourth, and third centuries B. C. were included in the list. Here were Miletus and Ephesus, Clazomenæ and Phocæa. The city of Smyrna was transplanted, about 700 B. C., from the Æolic to the Ionian confederation. In course of time this assemblage of important communities became subject to Lydia, and after the overthrow of Crœsus they were annexed to the Persian empire by Cyrus. Ionia furnished the field of broken faith and conflicting interests from which began the great struggle for the subjugation of Greece by the Persian kings.

Such is the outline of the distribution of the early Aryan tribes in Hellas. The geographical relations between that peninsula and Italy were always easy. The Adriatic is, even in its widest part, a narrow body, easily crossed from shore to shore. The course out of Epirus around the coast into Upper Italy is crossed with no barriers and attended with no difficulty. It can not be known by which of these routes the primitive peoples of Italy were distributed to their several tribal localities in the West, probably by both. It is safe to assume that a race which had made its way from beyond the Caspian, passing centuries en route in a contest with the forces of nature and crossing from island to island in more remote ages, would easily navigate the Adriatic. And this is the more likely highway of the prehistoric Italicans.

Easy ethnic relations of Greece and Italy.

According to our best information there were four principal groups of peoples in primitive Italy. On the south we find the Iapygians, or Œnotrians, with their several branching tribes, occupying first the peninsular projection next to Greece, and afterwards the whole country across to the Tyrrhenian sea. Some ethnographers have concluded that these southern peoples were not of Aryan descent, and it is possible that the Hamitic lines which we have agreed to carry into Italy distributed some branches in the southern parts as well as in Etruria. Upper Italy was occupied on the east by Gaulish, that is, Celtic, tribes, of which the Lingones and Insubres constituted the chief. On the west, as we have already seen, were the Etruscans, who were clearly a foreign race, differing radically in language and development from the other Italic peoples.

Place of the Iapygians; races of the north.

The greatest group of primitive tribes belonged to Central Italy and were nearly allied in ethnic descent. Of these peoples there were five distinct stocks, namely, the Umbrians, the Sabines, the Latins, the Volscians, and the Sabellians, commonly called Oscans, with their two branches of Samnites and Campanians. This scheme covers in general the populations which were distributed in the country stretching across from the Central Adriatic to the western shores of Italy.

Distribution of the Umbro-Sabellian tribes.

The first of these nations, called Umbrians, had their original seats on the Adriatic, between the Rubicon and the Æsis. The western boundary was the Apennine range and the Tiber. It is likely that in early times their territories were still more extensive. But before the rise of the Roman gens the Umbrians had already declined, and were easily subordinated by the dominant people. The territory of the Sabines lay close to Latium, and they and the Latins had intimate relations from the earliest times. The Sabine district was rugged in physical features and inclement in climate, and the opportunities of development were much less favorable than those of the people on the west.

The origin of the *Latins* is involved in inextricable myths. Poets and fable-makers of republican and imperial Rome elaborated and inflected the legendary lore which they had received from antiquity until it resembled the Greek fables in complexity and contradiction. One myth assigned to the Latins a Pelasgic origin, in common with the Peloponnesian Greeks and the Etruscans. More famous was the tradition of a descent from the heroic families of Troy. A more obscure legend assigned the moun-

Myth and tradition of the primitive Latini.

LAND OF THE ANCIENT LIGURIANS — MASSA, NEAR CARRARA — Drawn by J. Fulleylove

tainous parts of Central Italy as the native seat from which the founders of Latium had descended into the low countries of the west. There was an attempt in all this to bring in, after the Greek fashion, the agency of the gods, and to make it appear that the Latins were of divine origin and fatherhood. It is sufficient to recognize the kinship of these peoples with the other races associated with them in historical development in Central Italy.

The Volscians were prominent among the prehistoric peoples of the peninsula. They had for their neighbors the Sabellians, or Oscans. Their home was in the forbidding mountain district with which their name is geographically associated. At the beginning of authentic history they had ceased to be a separate people, and the remains of the race are scanty and imperfect. It may be said, however, that their isolated situation in the mountains tended to preserve their dialect from the mutations to which the languages of the neighboring tribes were subjected.

Scanty knowledge of the Volscians; their situation.

In the earliest times the Oscans possessed the largest territory in Central Italy. Their country extended well to the south, and this wide region they continued to dominate until Rome began by conquest to become mistress of Italy. Of the various Oscan peoples, the Samnites were the most powerful tribe, though the Campanians, Lucanians, and Bruttians were all important peoples before the ascendency of Rome.

Predominance of the Oscans; the Italian Gauls.

If we glance to Northern Italy, we find three peoples of different ethnic descent in that region. The Gauls proper occupied the great plains in the valley of the Po and its tributaries. Their country extended from the Alps to the Apennines and the Adriatic. It was commonly conceded that their immigration into Italy had been of a later date than that which must be assigned for the coming of the central nations. The principal divisions of the Gaulish race were the Insubres and the Senomani on the north of the Po, and the Boii and the Lingones on the south of that river.

The second general division of the peoples of Upper Italy were the Veneti, whose country covered the whole head of the Adriatic from Istria on the east to the valley of the Po in the west. Corresponding with what is now the southern part of Piedmont lay the territory of the Ligurians, of whose origin not much is known. They came into the country, however, before the Gauls, and were doubtless allied in their race descent with the peoples of Central Italy. Such in general was the tribal distribution of those primitive races which in process of time were consolidated under the leadership of the Latins, and ultimately forged into the most powerful nationality of the ancient world.

Place and derivation of the Veneti.

It appears tolerably conclusive that the Græco-Italic migration reached its limit with the Alps on the north and Liguria on the west. Other Aryan tribes in course of time found their way through the Alpine passes, and penetrated the civilizations established by their kinsmen in the south of Europe. But the Italic race proper was stayed with Italy. We therefore return to the East and again take our stand in the region of the transcaucasus. Here, on the northern slopes of the Armenian mountains, we find the Aryan dispersion pressing boldly to the north.

Limits of the Græco-Italic migrations.

In the country between the Caspian

and the eastern shore of the Black sea at least two ethnic departures were made from the main branch of migration. The first of these was to the right of the line of progress, and contributed the Ossetes and perhaps one or two other stocks of Indo-Europeans on the western borders of the Caspian. The other division seems to have been maritime in its plan, to have entered the Black sea, and to have carried itself in the direction of the Bosphorus. It is not unlikely that the ancient Phrygians, especially that part of the race inhabiting the Black sea coast, were contributed by this deflected movement out of Upper Armenia.

Origin and course of the North Aryan distribution.

By the course of the line we are now pursuing we are unexpectedly brought into proximity with that country in Asia Minor which received the final migratory impulse of the Celtic race. Though we have not yet reached the point in ethnic dispersion from which that race took its departure from the main northwestern stem of Aryan progression, we may well anticipate sufficiently to account for the presence in Asia Minor, on the southern borders of Bithynia and Paphlygonia, of a country peopled by Celts. This is the province of Galatia. The population of this country was contributed by the bending back of the Celtic race from its western limits of migration in the remote parts of Europe. The movement in question presents one of the strangest aspects of race progress. It is that of an ethnic line carried backward from the lower parts of Spain, in the old country of the Iberians, around the northern coasts of the Mediterranean, across Upper Italy, and down through the valley of the Danube to the Bosphorus. The latter part of this movement took place in the historical era. In the third century B. C. the Gallic people crossed over into Asia Minor and conquered the province to which they gave their own name. This invading migration was carried forward by three principal tribes and twelve tetrarchies, each directed by a chief, after the Celtic manner of warfare. It is instructive to reflect, while we here have our stand on the highlands of Phrygia or Pontus, that we are able to observe, as with a field glass, the northward movement of the old Aryan stock on the eastern borders of the Black sea, while, on the other hand, we can look down into Galatia, which was the terminus, after perhaps two thousand years, of one branch of the great migration.

Ethnic movements by which the Celts reached Galatia.

If then, for a moment, we anticipate the departure of the Celts from the main Aryan stem, which we are now tracing, to the north, we shall find the same to have occurred about the valley of the Upper Dnieper. From this point the migratory impulse bore off almost due west, across the larger part of Europe. It traversed Germany, and crossed the Rhine in general conformity with the coast line of the Baltic. It is probable that by this first movement to the west no races were deposited in anything like permanence until the stream was dispersed in Gaul. If we seek for time relations in this great movement we are at fault, but the period of the Celtic migration could hardly have been less than two thousand years B. C.

Point of departure for the Celtic dispersion in Europe.

It would appear from the invasion of Gaul and Britain by the Romans, in the first century B. C., that the Celtic race had already been long established in those regions, and that it had matured its institutional forms without disturbance. This is especially true of the

Complete development of the race in Gaul and Britain.

western parts of Gaul and of Britain, where the completeness of the druidical ceremonial and perfect condition of tribal government indicated a long occupation of the country. Ethnographers have not attempted to decide with certainty the priority of the respective movements by which the British Isles received their primitive Celtic population and Central Italy passed under the dominion of Græco-Italic immigrants.

In the beginnings of authentic history the Celts had already traversed Northern Europe, and had left traces of their progress in the east and actual tribes in the west. It was from this source that the Gauls (Celtæ), whom Cæsar declares to have been divided into three races of Galli, Aquitani, and Belgæ, were distributed. In all of Europe west of the Rhine the Celtic race became predominant, almost to the exclusion of other people. If we except the Basques and Iberians, it may be said that the whole country between the Rhine and the Atlantic was Celtic as to its primitive population.

Wide distribution of the Celts throughout the West.

In the preceding book we have already pointed out the fact that prehistoric races occupied this part of Europe before the Aryan migration. What the condition of the aborigines was at the time of the incoming of the Celts we are left to determine by conjecture. We have seen the extreme barbarity which characterized the aboriginal life of the cave dwellers and other savages to whom primeval Europe seems to have belonged. Upon these rude races the Celtic tribes were superimposed, and the foundations

The Celtic races superimposed on aboriginal barbarians.

THE CELTIC VANGUARD, OF THE AGE OF BRONZE.
Drawn by Emile Bayard.

were laid of that condition which we perceive when the expanding power of Rome brought her legions into Gaulish territory.

As the Celtic race continued its way to the south, several streams of migration put off laterally to the coast. The most important of these crossed the channel into Britain, where it again divided, one branch being carried over into Ireland, and the other penetrating the Highlands of Scotland. An examination of the Celtic languages has enabled the modern ethnographer to determine with toler-

Ramifications of the Celtic stock in the British Isles.

OLDEST CELTIC TYPES.
From the Gaulish bas-reliefs found at Entremont, near Aix.

able certainty the original distribution of the race in the British islands. There were two general Celtic stocks. The first of these was the Gadhelic, or Gaelic, branch, which was divided into three departures: the Irish stem proper, called the Erse, the Scottish Gael, and the Manx. These linguistic divisions point unmistakably to the tribal separation of the Gael of the Highlands, the Irish folk, and the inhabitants of the Isle of Man. The second stem presents the British division proper of Celtic. This also parted into three: the first of which was the Kymræg, softened into Cymric, meaning the original speech of the Welsh; the second was the Cornish; and the third the Armorican, being the language of Bretagne.

We thus note the dispersion of the Celts in our ancestral islands, and discover the parts of the country appropriated by the several tribes. Meanwhile, far down in Spain the main continental stream of Celtic migration was bent backwards, as we have seen above, through the greater part of Southern Europe, making its way finally to the valley of the Danube and thence to the Bosphorus. From this point migration and warfare carried the race, as has been said, into Galatia, thus bringing it in its final distribution to a point so near to the original Aryan movement east of the Black sea that the old departure of the race to the northwest and its last distribution in Galatia after thousands of years of wandering might almost be seen with a field glass in the hands of the observer from the highlands of Eastern Pontus!

Bending back of Celtic migration to the place of beginning.

In resuming the consideration of the movement of the great northwestern branch of the Aryan race, making its way between the Black sea and the Caspian, from the transcaucasus toward the Don, we are confronted by another of the disputed questions in ethnography. This relates to the independent or dependent origin of the Slavic peoples in their relations with the great Teutonic family. Were the Slavs and Germans involved originally in a common movement out of Asia? Were they still a common people in their progress from their Asiatic origin to their European dominions? If so, where and when did they part company in linguistic and institutional development? Which is the older of the two races? Which, if either, is derived

Question of the race connection of Teutons and Slavs considered.

from the other? Was the migration common to both, or were there *two migrations*, one Slavonic and the other Teutonic? These problems have been variously solved by different ethnographers, and the whole ground has been hotly contested since the question of race distribution assumed its present scientific aspect.

On the whole, it appears that the movement was common which carried these two races out of Asia into Europe. It may be safely alleged that the Teutonic and Slavonic peoples held together on their way to the north and far into the heart of Great Russia. It would be proper to call the whole line of progress from the Caucasus to the north, well up to the northern borders of the Russian empire, thence westward and southward to the borders of Poland, the Slavo-Teutonic stem. It certainly carried the volume of both races, both languages, both varieties of institutional forms. Above the sea of Azof, on the left as the migratory progress continued, a branch was thrown off into Sarmatia, from which that division of the modern Slavs, called Little Russians, have sprung. But the main line continued northward in the direction of the subsequent site of Moscow, and afterwards toward the gulf of Riga, on the Baltic. It was, however, to the south of the gulf of Finland, and perhaps nearly midway between that water and the northern bend of the Black sea that the final separation took place between the Germanic and the Slavonic races. In the meantime, a branch had been thrown off northward toward that collection of inland waters extending from the White sea to lake Ladoga, and another division to the west, into the country of the Letts.

Branches and directions of the Teuto-Slavonic stem.

If, then, we take our stand on the head-waters of the Dnieper, we shall not be far from the ethnic division on which was based the subsequent separation of the Slavonic and Teutonic peoples. The two stocks were both characterized for extreme fecundity and power of development. There are at the present time within the limits of European Russia and Poland about seventy-five million of people of Aryan descent. These may be divided into Russians proper, Poles, Bulgarians, Czechs, and Serbs, all of which are Slavonic in their ethnic origin.

Point of division of the two races; the Russian family.

The Russians are subdivided into Great Russians, Little Russians, and White Russians. The Letto-Lithuanian peoples are divided into Lithuanians proper, Zhmuds, and Letts, with a total of over three million. This is the summary of populations which have sprung in modern times from the single ethnic stem called Letto-Slavonic. The Great Russians themselves number forty-two million, and the Little Russians more than seventeen million. Besides the above peoples, the Græco-Roman population in Russia numbers considerably over a million, while the Germans, in admixture with the Armenians, Georgians, and Tsigans are represented by considerable communities.

Geographically, the Great Russians are grouped in the states and provinces around Moscow, extending northward to Novgorod and Vologda, southward to Kiev, eastward to Penza and Vyatka, westward to the Baltic provinces and the borders of Poland. The Little Russians are distributed chiefly in Galicia and Bukovina. In general, they belong to the southern parts of Russia, next to the Caucasus. The White Russians are

Distribution of the Great, Little, and White Russians.

distributed throughout the western governments of the empire. The Bulgarians inhabit Bulgaria Proper, Eastern Roumelia, and Roumania, and are scattered into Austria, Russia, and Macedonia. The other ethnic divisions are dispersed into the countries to which they have given their respective names —Servia, Lithuania, Croatia, etc.

Second only in importance as to numbers and first in importance in civilizing energy are the Teutonic races which issued in common with the peoples described above from the Slavo-Germanic stem. A glance at the map will show that Europe is divided from southeast to northwest by the two great rivers Danube and Rhine, whose waters issue from the same upland region, in the central part of the continent. It was on the right bank of the Rhine, extending down to the Baltic from the great central region, that the Germanic nations were first distributed. As the left bank of that river and hitherward to the western parts of Europe belonged roughly to the Celtic race, so the right bank eastward to the Vistula was Germania.

Dispersion of the Germans; three branches of the race.

Into this great region was extended and dispersed the Teutonic stream of immigration. Roughly speaking, the whole Teutonic stock was parted into three divisions, which correspond roughly with the modern linguistic distinctions of High German, Low German, and Scandinavian. In prehistoric times, however, one of the first distinct departures of the primitive stock was that which carried down the great race of the Goths into the valley of the Danube. They issued from the southern portion of the Baltic region, and appeared on the scene of their subsequent activities during the fourth century B. C.

The family known as Gothic has been somewhat unscientifically divided into the Vandals, the Heruli, the Rugii, the Gepidæ, the Alani, the Suevi, the Longobards, the Burgundians, and the Franks. On their arrival on the Lower Danube the Gothic race began to divide into the two major families of Ostrogoths and Visigoths, meaning the Eastern and Western Goths. The former had a habitation originally in Southern Russia, between the Dniester and the Don, while the latter held their territories from the Lower Danube to the Carpathian mountains. In course of time the Goths were pressed on their eastern frontiers by various invasions, until they were aggregated and heaped up on the left bank of the Danube, whence they ultimately burst into the Roman empire. After this event, as is well known, the Ostrogoths found an ultimate lodgment in Italy, while the Visigoths continued their progress into the Spanish peninsula and became a substratum of population in the modern ethnic development of that peninsula.

Analysis and distribution of the Goths.

The Franks appeared as an aggregation of Teutonic tribes on the Lower Rhine as early as the middle of the third century B. C. At the first they were confined to the right bank of the river, but in course of time passed over and began their settlements in the northern part of Gaul. They were ultimately divided into two families, known as the Salian Franks and the Ripuarians. It was the former division of the race that was thrown by impact on Gaul, and that was established within the limits of that country as a barbarian empire under Clovis and his successors. The Ripuarians spread southward and occupied first the right and afterwards the left bank of the Rhine, whence they carried their

Franks people the Rhine valley; the Vandal distribution.

incursions on the west to the Meuse and on the east to the Main. It was from the Ripuarian Franks that the Teutonic state called Franconia took its name. The Salians constituted one of the ethnic elements in the formation of the French people.

It will prove of interest to note only the ultimate distribution of the other branches of the Teutonic stock. The Vandals were essentially of this race, but had taken into their constitution Slavonic and Celtic elements. They belonged to the general division of Goths. One of their oldest seats was in the Riesen-Gebirge. Afterwards they occupied Pannonia and Dacia. In the fifth century of our era they played an important part in the overthrow of the Roman empire. In the Spanish peninsula they founded the state of Andalusia. Under Genseric they crossed into Africa, and there developed their greatest strength and nationality.

THE FRANKISH VANGUARD.
Drawn by Emile Bayard.

The Heruli were the earliest of the German races to make their way into Italy. There they established themselves under their great leader Odoacer, and the Herulian kingdom was the first barbarian empire created within the limits of the home government of Rome. The Gepidæ were likewise of Gothic extraction. Historically, they are first known to us in the third century B. C., in their territories on the Baltic. They also came into Pannonia, and were interposed for a while between the Ostrogothic and Visigothic divisions of the race. They

were joined to the armies of Attila, and were subsequently successful in gaining a province for themselves, on the Lower Theiss and Danube. Here they were finally overrun by the Longobards and the Avars, with whom the remnants of the race were amalgamated.

Movements of the Heruli and the Gepidæ.

One of the most powerful of the German migratory tribes was the *Suevi*. Their territories lay between the Rhine and the Weser. In their progress and development they spread southward as far as the Upper Danube. On the north they reached the coasts of the Baltic. It was with the Suevians that Cæsar had one of his hardest contests in his struggle for dominion north of the Alps. The Longobards, commonly called Lombards, were nearly related to the Suevic branch of the German race. From their seats in the valley of the Elbe they made their way into Italy, within the historical period, overthrew the Herulian monarchy, and established one of their own on the ruins of the empire. In later times they contributed their name to the modern state of Lombardy in Italy, and it is likely that their ethnic influence entered more largely into the formation of the northern Italian race than did the qualities of any other barbarian people.

Progress of the Suevi; the Longobards in Italy.

The Burgundians were a branch of the Gothic family, and first established themselves in Europe, in the country between the Oder and the Vistula. The Gepidæ drove them from their seats, and they sought refuge in the territory lying between the Main and Neckar. Here they were combined in common enterprises with the Suevi and Alani and the Vandals in their wars with the remaining powers of Rome. Afterwards they struggled with the Franks, by whom they were restricted to the province bearing their name. Such, in brief, was the European distribution of the principal barbarian nations of the Gothic stock.

Ethnic place and vicissitudes of the Burgundians.

Meanwhile, another division of the Teutonic race had made its way along the shores of the Baltic, and in Jutland, Friesland, Angleland, and in Hollowland had possessed themselves of the country and begun the formation of institutions. This is the so-called Low Germanic branch of the Aryan family. The tribal ramification in these lowlands was extraordinary. It was from this region that the Angles and Saxons and Jutes took their rise, and, in the fifth century, carried their battle-axes and spears into the forests of Britain.

Outspread of the Low Germans and the Norse.

From the southern coast line of the North sea the race next made its way into Scandinavia. Two branches of migration sprang from this region, one penetrating the great peninsula of Norway and Sweden, and the other making its way by water to Iceland. It was in the latter island that the Norse, or Scandinavian, race presented, and does until the present exhibit, the purest aspect of Scandinavian life and manners. There have always been such intimate race relations between the southern and northern shores of the Baltic that the Low Germans inhabiting the two countries have intermingled almost to the extinction of ethnic differences. But in Iceland the old Norse, or Scandinavian, stock has been allowed to develop according to its own laws into an independent race character.

Such, then, was the distribution of the great Teutonic and Slavonic races in the northern parts of Europe. It will be of interest to note *the extent of the complete*

dispersion of the Aryan family of men. On the east the Indic branch of the race reached the meridian of ninety degrees east from Greenwich. On the west the extreme limit of the primary Indo-European development was in Iceland and Ireland, under the meridian of ten degrees west, making a complete divergence east and west of one hundred degrees of longitude.

Extent of the dispersion of the Aryan family.

NORTHERN LIMIT OF THE ARYAN DISPERSION.—View in Upper Norway.—Drawn by Myrbach, from a photograph.

It was a peculiarity of the Aryan race never to be deflected to the south; that is, in its westward movements. The Indican and Iranian branches of the family dropped into India and Persia respectively. In the latter country the race was dispersed as far south as Beluchistan, and in the former to the bay of Bengal, in latitude twenty degrees north. But turning to the westward branches of the Indo-Europeans, we find them invariably bending to the north. Perhaps the only exception to this general law was in the case of the Celts, who, from their somewhat northern range in Germany, turned to the southwest across the Rhine into Gaul, and thence continued their course in the same direction as far as the country of the Basques and Iberians in Spain.

General and exceptional movements of the Aryans.

The northernmost limit of the whole movement was reached in the upper parts

of Norway and Sweden, about the parallel of seventy degrees north. The migration thus, in its entirety, presents a band very nearly coïncident with the north temperate zone. The belt is forty-five degrees in width, reaching a little above and extending a little below the limits of the zone referred to. The next conspicuous feature of this great distribution is the fact that it is essentially European. The exceptions within the borders of that continent of peoples derived from any other than Aryan stock are so few and insignificant as to be neglected without hurt to the general scheme. Europe is Aryan, and the Western Aryans are Europeans.

Extent and boundaries of the Aryan belt.

It is, of course, not the purpose to extend the lines of race movement by tracing out the continental colonization and development of the two Americas by people of Indo-European blood, or to note the world-wide colonization which has been effected within the last two or three centuries by people of the same race. These secondary movements, if developed in this connection, would confuse the concept of the original or natural distribution of mankind in the prehistoric ages. There is a sense in which men have moved from place to place on the surface of the earth *unconsciously*. That is, the movement has been accomplished while the race was still in the unconsciousness of childhood. There is another sense in which civilization has *consciously* carried forward the work of peopling the earth. All the latter movements are of record in the open annals of authentic history, and with such development and expansion the ethnographer has not much to do. His work is primarily with those prehistoric movements in which the races of men were distributed, under the influence of instinct and environment, to their destination in different quarters of the earth.

Only conscious movements to be considered in migration.

At this point, then, we touch the limit of the primeval excursions and settlements of the Ruddy races of mankind. To these races we have given the general ethnic name of Noachites, but have chosen to define them more scientifically by the term Ruddy, as indicative of their color. We have now traced out the dispersion of the three families to which ethnography has assigned the popular and traditional names of Hamites, Semites, and Japhethites. We have seen the first dropping southward into a form of geographical development very similar to that which the Japhethites, or Aryans, have exhibited in the north. The whole scheme of migratory dispersion resembles the two sides of a leaf, having its stem between the Caspian and the Persian gulf, its point in the Atlantic west of the Pillars of Hercules, its left-hand side in Arabia and Africa, and its right division in Europe. The central lines of this leaf correspond in general with the movements of the Semitic races to the west. The right-hand lines are those of the Aryans, and the left-hand departures those of the Hamites.

General view of the dispersion of the Ruddy races.

The limits of the present chapter are reached when we have marked out the migratory movements by which they were distributed into their respective countries. It now remains to take up another general division of mankind, and to note in like manner the course which the Brown races have pursued on their way to their destination in the great arena of Asia, in the islands of the Pacific, and ultimately in the two Americas.

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